PROSPECTIVE PAYMENT ASSESSMENT COMMISSION

MEDICARE AND THE AMERICAN HEALTH CARE SYSTEM

REPORT TO THE CONGRESS

JUNE 1991

REPORTS
RA
412
.3
M43526
1991

RA
412.3
.M43526
1991
c.3

PROSPECTIVE PAYMENT
ASSESSMENT COMMISSION

MEDICARE AND THE AMERICAN HEALTH CARE SYSTEM

REPORT TO THE CONGRESS

JUNE 1991

PROSPECTIVE PAYMENT ASSESSMENT COMMISSION

Stuart H. Altman, Ph.D., *Chairman*

Richard A. Berman
James D. Bernstein
Curtis C. Erickson
William D. Fullerton
William S. Hoffman, Ph.D.
Clark E. Kerr
James R. Kimmey, M.D.
David A. Kindig, M.D.
Larry L. Mathis
Barbara J. McNeil, M.D.*
Kathryn M. Mershon
Donald R. Oder
Elliott C. Roberts, Sr.
J. Michael Sadaj
Leonard D. Schaeffer
Jack K. Shelton*
J.B. Silvers, Ph.D.
Bruce C. Vladeck, Ph.D.
Sankey V. Williams, M.D.*

*Term expired 1991

Staff and Consultants

Donald A. Young, M.D., *Executive Director*
Laura A. Dummit, *Deputy Executive Director*
Stuart Guterman, *Deputy Executive Director*

Sharon B. Arnold, Ph.D.
John L. Ashby
Jennifer C. Baldwin
Amy B. Bernstein, Sc.D.
Wylene Carlyle
Carol L. Carter, Ph.D.
Delores J. Curtis
Jenifer Ehreth, Ph.D.
Laurie S. Feinberg, M.D.
Jolene A. Hall
Kirsten H. Iversen
Carrie L. Johnson
Amy D. Kossoff, M.D.
Lynn L. Lewis
Craig K. Lisk
Karen P. Lloyd, J.D.
Marlene H. Miller
Julian H. Pettengill
Steven M. Raetzman
Molly Ryan
Karen K. Shore
Deborah K. Williams
Jeannette A. Younes

Prospective Payment Assessment Commission

300 7th Street, S.W.
Suite 301B
Washington, D.C.
20024
Tel (202) 401-8986
Fax (202) 401-8739

June 1, 1991

The Honorable Dan Quayle
President of the Senate
United States Senate
Washington, DC 20510

Dear Mr. President:

I am hereby transmitting to the Congress the report *Medicare and the American Health Care System.* This report has been prepared by the Prospective Payment Assessment Commission as required by Section 1886(e)(2)(C) of the Social Security Act.

Sincerely,

Stuart H. Altman, Ph.D.
Chairman

Enclosure

Prospective Payment Assessment Commission

300 7th Street, S.W.
Suite 301B
Washington, D.C.
20024
Tel (202) 401-8986
Fax (202) 401-8739

June 1, 1991

The Honorable Thomas Foley
Speaker
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Speaker:

I am hereby transmitting to the Congress the report *Medicare and the American Health Care System*. This report has been prepared by the Prospective Payment Assessment Commission as required by Section 1886(e)(2)(C) of the Social Security Act.

Sincerely,

Stuart H. Altman, Ph.D.
Chairman

Enclosure

TABLE OF CONTENTS

Chapter *Page*

EXECUTIVE SUMMARY 1

1. ISSUES FACING THE AMERICAN HEALTH CARE SYSTEM 9
- National Trends in Health Care Expenditures 11
- Hospitals and Other Providers 14
  - Trends in Spending 14
    - Trends in Utilization 15
    - Trends in Supply 15
    - Other Reasons for Expenditure Increases 16
  - Rise in Hospital Operating Costs Per Admission 16
    - Inflation 16
    - Patient Care 17
    - Hospital Inputs 18
  - Pressures Facing Hospitals and Other Providers 18
    - Cost Containment Efforts 18
    - Uncompensated Care 18
    - Cost Shifting by Hospitals 19
    - Challenges to Tax-Exempt Status 19
    - Hospital Closures 19
    - Physicians 20
    - Nursing Homes 20
- Payers 20
  - Government 21
    - Medicare 22
    - Medicaid 23
    - Other Government Programs 25
  - Employer-Sponsored Private Health Insurance 25
    - Pressures Facing Employers 26
    - Cost Containment in the Health Insurance Market 26
    - Small Employers 27
  - Individuals 28
    - Trends in Expenditures 28
    - Medicare Beneficiaries 28
    - Individuals with Employer-Sponsored Insurance 29
- Problems and Unmet Needs 30
  - Uninsured Individuals 30
    - Estimates of the Uninsured 30
    - Characteristics of the Uninsured 31
    - Health Care Received by Uninsured Patients 31
  - Long-Term Care 32
  - The Nation's Health Status 32
- The Current Health Care System 32
  - The Difficulty in Controlling Health Care Costs 33
    - Consumers 33
    - Payers 33
    - Suppliers 33
  - Health Care Reform 34

2. HOSPITAL PAYMENTS, EXPENSES, AND FINANCIAL CONDITION 39
Hospital Financial Condition Under PPS 41
PPS Payments to Hospitals 42
Indirect Medical Education and Disproportionate Share Payments 44
Outlier Payments 44
The Effects of Payment Policy Changes 46
Changes in Fiscal Years 1990 and 1991 47
Cumulative Effects of Payment Policy 49
Case-Mix Index Change 49
Trends in PPS Costs and Payments 51
Changes in Total PPS Operating Costs 51
Changes in Total PPS Payments 51
Changes in PPS Discharges 52
Changes in Operating Costs Per Discharge 52
Changes in Payments Per Discharge 52
PPS Operating Margins 55
Trends in PPS Margins 55
Distribution of PPS Margins 55
Medicare Inpatient Margins 57
Rural Hospital Volume Changes and Financial Performance 58
Consistent Large Volume Declines 60
Consistent Small Volume Declines 60
Volume Increases 60
Volume Swings 61
Hospitals with Consistently High or Low PPS Margins 61
Urban Hospitals 61
Rural Hospitals 64
Summary 64
Overall Hospital Financial Status 64
Hospital Resources 65
Inpatient Utilization 65
Changes in Hospital Employment 65
Hospital Labor Productivity 66
Non-Labor Costs 68
Capital Costs 69
Tax-Exempt Debt Financing and Access to Debt Markets 69
Hospital Expenses and Revenues 71
Sources of Hospital Revenue 71
Trends in Total Hospital Expenses and Revenues 72
Total Hospital Margins 72
The Total Margin as an Indicator of Overall Hospital Financial Status 72
Trends in Total Margins 73
PPS Versus Total Margins 75
Other Measures of Hospital Financial Status 77
Liquidity 77
Capital Productivity 77
Capital Structure 77
Uncompensated Care 78
The Trend in Uncompensated Care 78
The Distribution of Uncompensated Care Costs 78
Hospital Closures in 1989 81
Utilization 81

Financial Indicators 82
Other Hospital Characteristics 82
Summary 82
Conclusions 83

3. HOSPITAL AND OTHER PATIENT CARE SERVICES 87
Hospital Services 89
Hospital Inpatient Care 89
Emerging Medical Technologies 91
Hospital Outpatient Services 92
Medicare Hospital Outpatient Services 93
Facilities Competing with Hospitals for Outpatients 95
Post-Acute and Long-Term Care Services 97
Skilled Nursing Facilities 97
Swing Beds 97
Home Health Care 98
Hospice Care 99
PPS-Excluded Hospitals and Distinct-Part Units 99
Growth in the Number and Utilization of PPS-Excluded Facilities 99
Patient Characteristics 100
Median Margins for PPS-Excluded Facilities 101
Non-Physician Providers 102
Conclusions 104

4. ISSUES AFFECTING MEDICARE BENEFICIARIES 107
The Medicare Program 109
Enrollment and Utilization 110
Medicare Payments 111
Beneficiary Liability 112
Supplemental Insurance 113
Beneficiary Coverage 113
Payments 114
Premiums 115
Regulations Affecting Medigap Policies: The Baucus Amendment 115
Post-Retirement Health Benefits for Retirees: Employer-Based Policies 116
Coverage 116
Types of Plans 116
Premiums 117
Costs 117
Future of PRHBs 117
Medicaid Coverage of Medicare Beneficiaries and Retirees 118
Summary 118
Long-Term Care 118
Site of Care and Financing 119
Changes in the Private Market for Long-Term Care Insurance 119
Access to Care 120
Access to Inpatient Hospital Care for Rural Medicare Beneficiaries 120
Hospital Closures 121
Hospitals That Closed in 1989 122
Closures in Counties with No Other Hospital 122
Closure and Access to a Hospital 124

Quality of Care 125
The RAND Quality of Care Study 125
Peer Review Organizations 126
The Agency for Health Care Policy and Research 126
Summary 127
Conclusions 127

APPENDIXES 131
A. Biographical Sketches of Commissioners 133
B. Glossary 139

LIST OF TABLES

Chapter 1. Issues Facing the American Health Care System *Page*

1-1 National Health Expenditures, 1980-1989 12
1-2 Change in Real Medicare Benefit Payments, by Selected Type of Service, 1981-1989 (In Percent) 22
1-3 Medicare Baseline Estimates, 1990-1996 (In Billions) 23
1-4 Change in Expenditures for Government Health Programs, 1980-1989 (In Percent) 25

Chapter 2. Hospital Payments, Expenses, and Financial Condition

2-1 Distribution of PPS Hospitals and Discharges and Estimated Fiscal Year 1991 PPS Payments, by Hospital Group 43
2-2 Distribution of Estimated Fiscal Year 1991 PPS Payments, by Payment Type and Hospital Group (In Percent) 45
2-3 Effects of PPS Update Factors and Other Payment Policy Changes on Per-Case PPS Payment Rate, by Hospital Group (In Percent) 48
2-4 Changes in the Medicare Case-Mix Index Under PPS, by Hospital Group, 1981-1989 50
2-5 Changes in PPS Operating Costs, Payments, and Discharges, First Six Years of PPS (In Percent) 51
2-6 Changes in PPS Operating Costs Per Discharge, by Hospital Group, First Six Years of PPS (In Percent) 53
2-7 Changes in PPS Payments Per Discharge, by Hospital Group, First Six Years of PPS (In Percent) 54
2-8 PPS Operating Margins, by Hospital Group, First Six Years of PPS 56
2-9 Distribution of PPS Operating Margins and Percentage of Hospitals with Negative Margins, First Six Years of PPS 57
2-10 Distribution of PPS Operating Margins, by Hospital Group, Sixth Year of PPS (In Percent) 58
2-11 Medicare Pass-Through Payments as a Percentage of Total Medicare Inpatient Hospital Payments in the Sixth Year of PPS, by Hospital Group 59
2-12 Total Hospital Inpatient Volume Patterns and Financial Performance, First Through Fifth Years of PPS 60
2-13 Characteristics of Urban Hospitals with Consistently Low and Consistently High PPS Margins, Third Through Fifth Years of PPS. 62
2-14 Characteristics of Rural Hospitals with Consistently Low and Consistently High PPS Margins, Third Through Fifth Years of PPS 63
2-15 Change in Average Hospital Occupancy Rate and Number of Beds, 1980-1990 65
2-16 Change in Hospital Employment, 1981-1989 (In Percent) 65
2-17 Professional Personnel in Various Labor Categories, 1981-1989 (In Percent) 66
2-18 Change in Labor Expenses Per FTE, 1981-1989 (In Percent) 66
2-19 Change in Aggregate Productivity and Its Component Measures, 1981-1989 (In Percent) 67
2-20 Change in Capital as a Proportion of Total Cost and Capital as a Proportion of Operating Cost, 1980-1990 69
2-21 Change in Hospital Revenue and Proportion of Revenue, by Source, 1980-1990 (In Percent) 72
2-22 Total Hospital Margins, by Hospital Group, First Six Years of PPS (In Percent) 74
2-23 Distribution of Hospitals, by PPS Margin and Total Margin (In Percent) 76
2-24 Uncompensated Care Costs (With Government Subsidy Offset), by Hospital Group, 1980-1989 (In Percent) 80

2-25 Distribution of Uncompensated Care Costs (With Government Subsidy Offset), by Hospital Group, 1989 80
2-26 Characteristics of Open Hospitals and Hospitals That Closed in 1989 82
2-27 Financial Performance of Open Hospitals Compared to Hospitals That Closed in 1989 82

Chapter 3. Hospital and Other Patient Care Services

3-1 Change in Admissions to Community Hospitals, 1979-1990 (In Percent) 89
3-2 Length of Stay for Adult Patients, by Age, 1980-1990 90
3-3 Change in Total Admissions for Urban and Rural Community Hospitals, 1979-1989 (In Percent) 91
3-4 Community Hospitals Providing Selected Services, 1979-1989 (In Percent) 91
3-5 Hospitals Providing Selected Services, by Hospital Size, 1989 (In Percent) 92
3-6 Surgical Operations in Community Hospitals, 1979 and 1988-1989 (In Millions) 93
3-7 Most Frequently Occurring Diagnosis Codes on Outpatient Bills, 1988 94
3-8 Most Frequently Occurring Types of Bills, 1988 95
3-9 Most Frequently Occurring HCPCS Codes, 1988 95
3-10 Types of Free-Standing Ambulatory Care Providers 96
3-11 Medicare Beneficiary Skilled Nursing Facility Utilization, 1980-1990 98
3-12 Home Health Care Utilization, 1980-1990 99
3-13 PPS-Excluded Hospitals and Distinct-Part Units, 1984-1990 100
3-14 Medicare Discharges from PPS-Excluded Hospitals and Distinct-Part Units, 1985-1988 100
3-15 Median TEFRA Inpatient Margins for PPS-Excluded Providers in Fiscal Year 1988 101
3-16 Non-Physician Hospital-Based Full-Time Equivalents, 1982-1989 103
3-17 Non-Physician Hospital-Based Full-Time Equivalents, 1984-1989 (In Percent) 103

Chapter 4. Issues Affecting Medicare Beneficiaries

4-1 Trends in Medicare Enrollment, 1966-1991 (In Millions) 110
4-2 Aged and Disabled Persons Served by Medicare, 1980-1988 (Per 1,000 Enrollees) 110
4-3 Estimated Medicare Benefit Payments, 1980-1990 111
4-4 Estimated Medicare Benefit Payments, by Type of Service, 1980-1990 112
4-5 Estimated Beneficiary Liabilities, 1980-1990 112
4-6 Average Total Expenditures Per Elderly Person, 1987 113
4-7 Health Insurance Coverage of the Elderly Population, by Income, 1988 (In Millions) 114
4-8 Comparison of Services Offered by Hospitals That Closed in 1989 and Hospitals That Remained Open 122
4-9 Population Characteristics of Counties with a Hospital in Operation and a Hospital That Closed 123
4-10 Health Care Resources in Counties with a Hospital in Operation and a Hospital That Closed 123
4-11 Characteristics of Open Versus Closed Hospitals in Counties with Only One Hospital 124
4-12 Comparison of Average Distance and Travel Times to Nearest Hospitals for Two Types of Counties 124

LIST OF FIGURES

Chapter 1. Issues Facing the American Health Care System *Page*

1-1 Change in Real National and Medicare Total Expenditures, 1970-1989 (Per Capita and Per Enrollee) 12
1-2 Change in Real National and Medicare Hospital and Physician Expenditures, 1970-1989 (Per Capita and Per Enrollee) 12
1-3 Change in National Health Expenditures Compared with Change in GNP, 1980-1989 (In Percent) 13
1-4 Reasons for Growth in Personal Health Care Expenditures, 1980-1989 13
1-5 Personal Health Care Expenditures, by Provider, 1989 14
1-6 Change in Real Per Capita Health Expenditures, by Selected Providers, 1981-1989 (In Percent) 15
1-7 Total Community Hospital Beds and Occupied Beds, 1980-1989 (In Thousands) 16
1-8 The Contribution of Inflation, Patient Care, and Hospital Inputs in Increasing Hospital Operating Cost, Per Admission, 1985-1989 17
1-9 Health Expenditures, by Sources of Payment, 1965-1989 (In Percent) 21
1-10 Personal Health Care Expenditures, by Program, 1989 21
1-11 Federal Outlays for Selected Categories, 1970-1990 (In Percent) 21
1-12 State Medicaid Spending, 1970-1990 (In Billions) 24
1-13 Medicaid Recipients and Persons Below Poverty, 1975-1988 (In Percent) 24
1-14 Health Expenditures as a Percent of Disposable Income for Aged Households Compared with All Households 29
1-15 Medical Expenses as a Percent of Income for Low-Income Elderly People, by Hospital Use and Insurance Coverage, 1986 29
1-16 Nonaged Uninsured and Unemployed Populations, 1979-1989 (In Percent) 31
1-17 Uninsured, by Work Status, 1988 31

Chapter 2. Hospital Payments, Expenses, and Financial Condition

2-1 Cumulative Increases in PPS Costs and Payments Per Discharge, First Eight Years of PPS (In Percent) 52
2-2 Aggregate PPS Operating Margin, First Eight Years of PPS (In Percent) 55
2-3 Cumulative Volume Changes in Rural and Urban Hospitals, First to Fifth Year of PPS (In Percent) 59
2-4 Cumulative Change in Aggregate Productivity, 1983-1989 (In Percent) 68
2-5 Cumulative Change in Case-Mix Constant Intensity of Services and Intermediate Productivity, 1983-1989 (In Percent) 68
2-6 Change in Capital Costs: Depreciation, Interest, and Total Capital, 1975-1990 (In Percent) 69
2-7 Health Care and Nursing Home Tax-Exempt Municipal Bond Volume, 1980-1990 (In Billions) 70
2-8 Insured and AAA Rated Bonds, 1980-1990 (In Percent) 70
2-9 Hospital Bond Rating Changes: Upgrades and Downgrades, 1983-1990 71
2-10 Change in Real Hospital Expenses and Revenues Per Adjusted Admission, 1980-1990 (In Percent) 73
2-11 PPS and Total Margins, First Six Years of PPS (In Percent) 75
2-12 PPS and Total Margins for Selected Hospital Groups, Sixth Year of PPS 75
2-13 Cumulative Change in Hospital Uncompensated Care Costs and Government Operating Subsidies, 1980-1989 (In Percent) 79

2-14 Community Hospital Closures and Conversions, 1980-1989 81

Chapter 3. Hospital and Other Patient Care Services

3-1 Community Hospitals Providing Selected Outpatient Services (In Percent) 94
3-2 Aggregate Margins for PPS Hospitals with Distinct-Part Rehabilitation Units, Second to Fifth Year of PPS (In Percent) 102
3-3 Aggregate Margins for PPS Hospitals with Distinct-Part Psychiatric Units, Second to Fifth Year of PPS (In Percent) 102

Chapter 4. Issues Affecting Medicare Beneficiaries

4-1 Health Insurance Coverage of the Elderly, 1988 (In Percent) 114
4-2 Utilization of Physician Services by the Elderly Population, by Type of Insurance, 1987 120

Executive Summary

Executive Summary

In 1989, national spending for health care services grew by 11.1 percent, reaching more than $600 billion. This continued a four-year accelerating trend in health care expenditure growth—a trend that has been accompanied by dramatic changes in the health care system. Among these are changes in the delivery of health care, spurred by rapid developments in technology; increases in the types and number of services provided to each patient in all health care settings; and a declining emphasis on hospital inpatient services. The financing of health care has undergone major change as well, with government, business, and individuals striving to contain costs. Yet in spite of ever-higher spending, millions of Americans lack insurance for basic health services.

This report on Medicare and the American health care system presents the results of the Prospective Payment Assessment Commission's (ProPAC) ongoing study of these issues. The report highlights how Medicare's prospective payment system (PPS) has affected hospital inpatient care and discusses a variety of topics related to the Medicare program's role and its interaction with other aspects of the health care system.

Expenditures for health care in the United States have spiraled from $249 billion in 1980 to $604 billion in 1989. Preliminary estimates indicate that this trend continued in 1990. After controlling for the effects of general inflation, the average yearly spending increase was about 5.4 percent throughout the 1980s. As a proportion of the gross national product, health expenditures were 11.6 percent in 1989, compared with 9.1 percent in 1980.

Not only is the level of spending high and rising, but there is also dissatisfaction with the structure and financing of health care and concern about the value of the services being purchased. Millions of Americans remain uninsured for basic health care and may not receive needed medical services. Many more are also vulnerable to impoverishment from the costs of long-term care or catastrophic illness. Further, this nation lags behind other developed countries in health status indicators such as life expectancy and infant mortality.

Most insured people have access to sophisticated and costly care. The elderly and a limited proportion of the poor are covered by Medicare and Medicaid, while a majority of working Americans receive health insurance through their employers. But others lack health insurance coverage altogether. This group is not necessarily restricted to the unemployed or the poor. In 1989, for example, of 24 million uninsured adults, 18.5 million were employed. Of the 9.2 million uninsured children, only 14 percent were in households headed by an unemployed person. In addition, about 30 percent of the uninsured had incomes below the poverty level in 1989, but 12 percent had incomes greater than four times the poverty level. Explanations for this lack of coverage are varied and complex. The cost of coverage for small employers and individual employees with certain medical conditions is in many cases prohibitive. Moreover, in some industries, such as agriculture and construction, both the nature of the work and employment patterns have meant higher than average proportions of uninsured workers. Further, new accounting requirements will increase the financial pressures on employer-funded post-retirement health benefits (PRHBs). If employers drop PRHBs because of these requirements, the number of uninsured retirees not yet eligible for Medicare benefits may rise.

The shortcomings of the existing health care system have led to a number of proposals for fundamental changes or overall reforms. Most of these proposals share a common goal: providing access to health care for all Americans. Some also contain features aimed at controlling the rate of growth in spending for health services. These include developing national practice guidelines and standards of care, encouraging managed care, increasing copayments and deductibles, and implementing global operating budgets for providers.

INCREASED SPENDING FOR HEALTH CARE

Spending on health care has increased for many reasons. Population growth, economywide inflation, price inflation specific to the health sector, and changes in the use and intensity of health services have all driven the growth in expenditures. Further, the delivery system quickly develops additional capacity to furnish services in response to available financing. The pluralistic financing and delivery system also results in added costs due to inefficiencies in the use of health care resources and high administrative expenses. There are also mixed signals as to which costs should be controlled and how to control them.

The relative contributions of the factors that have led to increased health spending can be examined further. In recent years, population growth has resulted in a 1.0 percent annual increase in health costs. General economic inflation has contributed, depending on the year, between 2.8 percent and 9.7 percent annually. Price inflation specific to the health care sector has also played an important role, adding 1.6 percent to 3.0 percent per year. Finally, the intensity of services (that is, the quantity and complexity of the services furnished) has contributed about 2.0 percent to the average annual increase.

The number and types of providers, as well as service capacity, have grown. The supply of services has expanded in many areas, new technologies have been incorporated rapidly, existing technologies have diffused widely, input costs (such as wages) have risen, and more services are delivered during each hospital admission or physician visit. Consequently, most Americans with insurance coverage have access to a wide array of ambulatory and inpatient acute care services, which are frequently technology-intensive. The availability of these services and insurance coverage leads to their increased demand and use, thereby driving up overall costs.

HOSPITAL SERVICES

Along with the rise in overall spending for health care, there have been significant changes in the types of care being furnished. Hospital services have always accounted for the largest component of personal health care expenditures. Between 1980 and 1989, total hospital expenses grew from $102 billion to $233 billion. Nevertheless, the total share of spending for all inpatient and outpatient hospital services declined from 47 percent in 1980 to 44 percent in 1989.

One of the most notable changes in health care delivery over the past decade is the declining emphasis on inpatient services, which has been accompanied by the growing use of outpatient services. The volume of inpatient admissions fell nearly 10 percent between 1979 and 1990, while the number of outpatient visits grew nearly 44 percent. By 1989, almost one-half of all hospital surgeries were performed in the outpatient setting.

The share of spending for inpatient hospital care also fell quite rapidly. In 1984, inpatient care accounted for 81.3 percent of hospital revenue; by 1990, the share had dropped to 72.5 percent.

The decline in the volume of admissions has been particularly large for the population under age 65. Admissions fell almost 19 percent between 1980 and 1990 for this age group. During the same time period, there was a 15.4 percent overall increase in admissions for people 65 and over, despite a decline in each year from 1984 to 1986. Average length of stay was decreasing slowly prior to PPS, and this trend accelerated briefly when PPS was implemented. Since 1985, however, average length of stay has remained relatively stable for all groups of patients.

The drop in admissions began earlier for rural hospitals than for urban hospitals. Further, the 35 percent decline experienced by rural hospitals during the 1980s was nearly 10 times larger than the decline for urban hospitals. Also, admissions to hospitals with fewer than 100 beds fell by nearly 30 percent during the 1980s, compared with about 8 percent for hospitals with more than 100 beds.

The slowdown in admissions to small, predominantly rural hospitals raises concerns about access to care for rural beneficiaries. However, a ProPAC-sponsored study of five states showed that hospital admission rates for residents of rural areas tend to be higher than those for urban residents. Rural residents go to their local hospitals for some types of inpatient care, but fewer than half go there for surgery. The share of admissions to large urban

hospitals accounted for by rural Medicare beneficiaries increased from 26 percent in 1984 to 31 percent in 1988.

While the role of inpatient care has declined, the importance of ambulatory care services has expanded. Outpatient services have become an increasingly significant revenue source for hospitals, comprising 22.5 percent in 1990 compared with 12.5 percent in 1980. The largest increase in the outpatient proportion of revenues occurred in 1985, when the pressure on hospitals to perform noncomplex surgical procedures on an outpatient basis apparently reached its peak. Outpatient revenue per visit has grown rapidly as well, at an average annual rate of 11.3 percent from 1984 to 1990, compared with 8.9 percent for inpatient revenue per admission.

FINANCING OF HEALTH CARE

The financing of health care in America is shared by Federal, state, and local governments; businesses; and individuals. The share of health spending by each of these groups remained stable during the 1980s. Spending for health care, however, consumed a progressively larger share of government revenues and business income. In addition, for elderly people the costs of health care rose faster than income.

The health care system is highly decentralized, with many payers and providers. No single payer or provider can control all services furnished to all individuals. In addition, overutilization of some medical services has not yet been controlled. Medicare's prospective payment system illustrates the results of an attempt by one major payer to control costs.

The prospective payment system has helped to control Medicare program spending for inpatient hospital services. At the same time, however, Medicare spending for hospital outpatient and other ambulatory services has grown rapidly. Thus, Medicare savings on the inpatient side are partially offset by the growth in spending for ambulatory care. Further, while PPS increased the pressure on hospitals to control inpatient expenses, the effects were counterbalanced by hospitals' abilities to generate additional revenues from other payers and other services. As a result, even a major payer like Medicare has had a limited effect on the overall annual increase in hospital expenses.

The Medicare PPS experience has clearly demonstrated that a cost containment initiative implemented by one payer and directed to one type of provider can result in savings for that payer. But its broader effects are severely limited because providers can offset shortfalls by increasing revenues for other services and from other payers.

The continuing increase in health care costs also affects Medicare beneficiaries. They share financial responsibility for Medicare-covered services through premiums, copayments, deductibles, and physician charges in excess of the Medicare-allowed amounts (balance billing). In 1990, beneficiary liabilities were 23.2 percent of Medicare expenditures, somewhat higher than the 22.0 percent in 1980. Beneficiaries paid 8.4 percent of their Medicare inpatient hospital bills in 1990, compared with 6.7 percent in 1980. For other Medicare services, the share of beneficiary liability has been declining slightly over time.

Almost all the elderly receive health insurance coverage through the Medicare program. In addition, approximately 70 percent of the elderly have private supplemental insurance to protect against some out-of-pocket costs for health care services, while another 8 percent receive assistance from Medicaid and other public programs. This leaves 22 percent of beneficiaries with Medicare coverage only. Of those with private supplemental insurance, 38 percent obtain coverage under group policies from current or former employers. However, most of these policies do not insure against several gaps in Medicare coverage. Some policies provide limited coverage for certain prescription drugs, but rarely do the policies cover physical examinations, routine dental care, vision care, hearing aids, or nursing home stays that fail to meet Medicare requirements. Consequently, significant numbers of the elderly remain vulnerable to these costs.

FINANCIAL CONDITION OF HOSPITALS

The financial status of hospitals is determined by many factors, including the types of services provided, the number and types of patients using those services, the way hospitals are paid for the

care they furnish, and other aspects of the environment in which hospitals operate. In response to spending increases, Medicare, Medicaid, and private insurers have implemented a variety of cost containment strategies. Constraints on payments are among the many sources of pressure faced by providers during the past decade.

The aggregate total margin (total revenues less total expenses, divided by total revenues) for all hospitals decreased over the first four years of PPS, from 7.3 percent in the first year of PPS to 3.5 percent in the fourth year. In the fifth and sixth years of PPS, total margins stabilized and were similar to those in the early 1980s, before PPS. Total margins were higher for urban hospitals than for rural hospitals in the first four years of PPS. But by the sixth year, the total margin was slightly higher for rural hospitals. Total hospital expenses per adjusted admission (adjusted for general inflation) grew by more than 6 percent per year between 1981 and 1983. In 1984, however, the annual increase fell sharply to 3 percent, and after another surge from 1985 to 1987, the increase leveled off at just over 4 percent in 1988 and 1989. Revenues per adjusted admission increased at a slightly higher rate than expenses in the early 1980s. The patterns of increases for revenues and expenses have been quite similar throughout the decade.

Between 1985 and 1989, hospital operating costs per admission grew about 8.9 percent per year. More than 40 percent of the increase was due to inflation in the general economy. Another 17 percent came from inflation specific to the health care sector. Wages for nursing and other personnel, as well as the prices of drugs and some medical equipment, are rising faster than general inflation. Increases in patient complexity, combined with greater intensity of services furnished to individual patients, accounted for an additional 41 percent of the annual growth in hospital expenses. Improvements in labor and non-labor inputs used by hospitals, offset by declines in labor productivity, added about 2 percent. Hospitals do not have control over many of the factors contributing to operating expense increases, yet they and the physicians who treat their patients do have control over the types and amount of services furnished. Therefore, changes in service intensity and better use of inputs are areas where significant reductions in the cost of hospital care may be found.

Another pressure on providers relates to the burden of costs associated with treating uninsured patients. Hospitals and others who provide care to the uninsured often do not receive adequate payment, and consequently may try to recoup some of their losses by seeking additional revenues from other payers. This imposes greater financial burdens on these payers, making it even more difficult for some individuals to obtain coverage.

Hospital uncompensated care costs, which include both charity care and bad debts, have been increasing steadily throughout the 1980s. The costs of uncompensated care rose nearly two percentage points per year more than overall hospital costs during the 1980s. Before PPS, hospitals spent about 5 percent of their resources providing uncompensated care. This increased to 6.4 percent by 1986, although it has decreased slightly since then. While uncompensated care has traditionally been associated with large, inner-city teaching hospitals and with publicly owned institutions, the uncompensated care burden has begun to spread beyond these hospitals.

EFFECTS OF MEDICARE'S PPS

Medicare's prospective payment system has had significant effects on hospital financial condition. One of the major objectives of PPS is to encourage hospitals to hold down the cost of providing care to Medicare patients. Except for the first year of PPS, hospitals have experienced large increases in Medicare operating costs per discharge. The cumulative growth in PPS operating costs per discharge is estimated to be about 95 percent from the first to the eighth year of PPS. This is more than twice the increase in the PPS market basket (the index of the cost of inputs such as labor and supplies used to produce care for Medicare hospital patients) over the same period. The PPS update factor, which is the annual percentage change in the PPS base payment amount, is estimated to have increased payment rates by a cumulative 28 percent in the first eight years of PPS, while PPS payments per discharge have risen by about 80 percent.

The estimated growth in PPS payments per discharge is much larger than the cumulative update because it includes the effect of increases in the case-mix index, which measures the relative costliness of patients treated by a hospital and upon which payment is directly based. In addition,

changes in PPS policy have affected the payments that hospitals receive.

Hospitals exhibit a wide range of PPS margins (PPS payments less Medicare-allowable inpatient operating costs, divided by PPS payments), both across and within hospital groups. This results from the variability in both PPS payments and hospital costs. Payments and costs vary because hospitals differ in the volume and types of cases they treat, the kinds of services they provide, and the ways they provide them. PPS margins have declined from about 14.5 percent in the first two years of PPS to -1.4 percent in the sixth year.

Certain groups of hospitals, including teaching and other large urban hospitals, have had higher than average PPS margins. Others, such as small rural hospitals, have not done as well. Over time, however, the difference between PPS margins for rural and urban hospitals has narrowed somewhat, from 7.4 percentage points in the first year of PPS to 4.4 percentage points in the sixth year. Major teaching hospitals continue to have the highest PPS margins, approximately 6.7 percent in the sixth year.

The aggregate total margin (total revenues less total expenses, divided by total revenues) for all hospitals decreased over the first six years of PPS, but the decline was not nearly as steep as the drop in the PPS margin. Some hospital groups have PPS margins that are substantially different from their total margins. For instance, the PPS margin for rural hospitals was substantially below zero in the sixth year, while the total margin was substantially above zero. Major teaching hospitals have had consistently lower total margins than other teaching or non-teaching hospitals, in sharp contrast to their high PPS margins. The patterns of PPS and total margins for individual hospitals are more closely related, however. Within any group, hospitals that perform better under PPS tend to perform better overall.

Hospitals that have done well under Medicare's PPS are those that reduced their length of stay, controlled their labor costs in relation to others in their market area, and offered more services to attract patients. In urban areas, hospitals that performed consistently well under PPS used less expensive mixes of labor. Among rural hospitals, doing well under PPS has been correlated with a slower decline in admissions. Many of these factors are within the hospital's control, suggesting that hospitals can, at least to some extent, influence their own performance under PPS.

Hospitals with particularly poor overall financial performance may close, and more than 500 hospitals have done so since 1980. Almost one-half of the hospitals that closed in 1989 converted from inpatient to outpatient or long-term care facilities. This may reflect an increase in hospital industry efficiency, since hospitals that closed had low inpatient utilization. Bed supply per capita in counties where hospitals closed was also higher than in counties where no hospital closed. Compared with urban hospitals that remained open, those that closed in 1989 tended to be in larger, more densely populated metropolitan areas with more physicians, general surgeons, and registered nurses. This suggests that some urban hospital closures may have been associated with overcapacity or competition.

Rural hospitals that closed, by contrast, were located in areas with smaller and more rapidly declining populations. Overall, studies to date do not show that access to inpatient hospital care has been significantly impeded by rural hospital closures, even in counties where the only hospital closed. In most cases, services remained available in the next county. Concerns remain, however, about access to ambulatory care as well as to emergency room and prenatal services. Large decreases in inpatient volume that lead to closure of small hospitals may jeopardize both access to and quality of care for local residents who find it difficult to travel elsewhere for hospital care.

Until recently, the effects of PPS on quality of care had not been fully evaluated. A RAND study sponsored by the Health Care Financing Administration examined pre- and post-PPS outcomes of care and health status at discharge for nearly 17,000 Medicare beneficiaries. The study showed that the overall trend in improved quality of care was not interrupted by the implementation of PPS, as measured by 30-day and six-month post-admission mortality. In addition, the incidence of poor care, as measured through physician review of medical records, declined from 25 percent prior to PPS to 12 percent post-PPS. However, after the implementation of PPS, a larger proportion of Medicare bene-

ficiaries were discharged home in an unstable condition—15 percent, compared with 10 percent before PPS.

CONCLUSIONS

A growing number of individuals and organizations—public and private—are dissatisfied with America's health care system. This dissatisfaction is the result of several factors: rising costs, pressures on providers, and unmet health care needs. Unless major structural changes that control costs are made in the financing and delivery of services, spending is projected to rise at similar rates into the next century.

These factors have led to several proposals for health care reform. The proposals that have been offered deserve serious consideration. However, in evaluating alternatives, a balance must be struck between conflicting desires to provide access to care for the entire population and to limit the financial burden that government, employers, and individuals must bear. Meeting these challenges means making some very difficult choices—ones that the nation has not yet been willing or able to make.

Chapter 1

Issues Facing the American Health Care System

Chapter 1

Issues Facing the American Health Care System

Spending for health care in the United States continued to rise rapidly throughout the 1980s, despite efforts to contain costs. The U.S. spends more than any other country on health care per person, and the value of this high spending is being questioned by everyone involved in the health care system: consumers, providers, insurers, and policy makers. Indeed, large groups of Americans are uninsured for basic health services, do not receive needed medical care, or are vulnerable to financial impoverishment from the costs of catastrophic illness and long-term care. These fundamental features of the American health care system—rising costs and inadequate access to health care services—define the challenge for any major reform.

Expenditures attributable to the Medicare program comprise 33 percent of all health care spending.[1] Further, the Medicare program accounts for 27 percent of all payments to hospitals. As a major payer for health care services, Medicare influences and is influenced by the health care system. In this report, the Prospective Payment Assessment Commission (ProPAC) examines Medicare and provides a context for evaluating its impact and interaction with providers of care, other public and private payers, and individuals.

This chapter begins by describing national trends in health care spending. Next, the trend in and distribution of spending are reviewed for hospitals, physicians, and nursing homes. Spending increases have led to the implementation of cost containment strategies, which have put pressures on providers to control costs. These pressures and their consequences are discussed. The trend in and distribution of spending are then described for the payers of health care services. The problems of the uninsured, the difficulty in paying for long-term care, and national health outcomes are also highlighted. In the final section, the characteristics of the U.S. health system are summarized. The chapter ends with a discussion of the key features of recent proposals for reform.

Information on the financial condition of hospitals, including revenues, expenses, and margins, is contained in Chapter 2. Availability of services and the changing patterns of service use are described in Chapter 3. Characteristics of Medicare beneficiaries, health insurance coverage, and access to and quality of care are discussed in Chapter 4.

NATIONAL TRENDS IN HEALTH CARE EXPENDITURES

During the 1980s, national expenditures for health care increased almost two and a half times, spiraling from about $249 billion in 1980 to $604 billion in 1989 (see Table 1-1).[2] The annual rate of increase was 15.9 percent in 1981 and fell to 7.7 percent in 1986, but climbed to 11.1 percent by 1989. After removing the effects of general inflation, the average yearly rate of change in real health care expenditures was 5.4 percent throughout the 1980s. During the 1970s real spending rose at a yearly rate of 6.2 percent. Cost containment efforts during the past decade therefore appear to have had only modest success in curtailing overall spending growth. Preliminary estimates show the spending trend continuing with an 11.6 percent increase in 1990.

Medicare costs per enrollee increased at a slower rate than national per capita health care costs during the late 1980s, indicating that government cost containment was more effective than that of the private sector (see Figure 1-1). Much of this success was due to a slowdown in the growth rate of expenditures for hospital services, inasmuch as Medicare physician expenditures continued to increase, on average, faster than the national average

Table 1-1. National Health Expenditures, 1980-1989

Year	National Health Expenditures (In Billions)*	Percent Change	Real National Health Expenditures (In Billions)*	Percent Change
1980	$249.1	--	$249.1	--
1981	288.6	15.9%	264.0	6.0%
1982	323.8	12.2	278.9	5.6
1983	356.1	10.0	294.5	5.6
1984	387.0	8.7	307.6	4.4
1985	420.1	8.5	322.9	5.0
1986	452.3	7.7	339.0	5.0
1987	492.5	8.9	356.6	5.2
1988	544.0	10.5	378.0	6.0
1989	604.1	11.1	401.7	6.2

* Adjusted by the fixed-weight price index for GNP. Real expenditures are expressed in 1980 dollars.

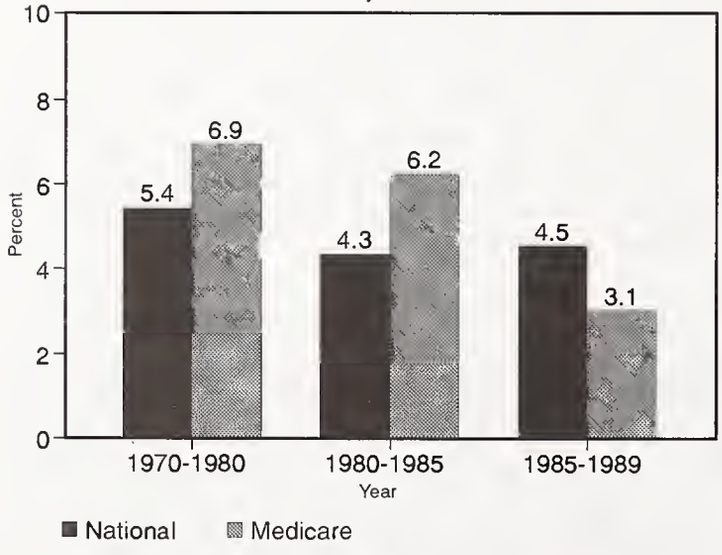
SOURCE: Health Care Financing Administration, Office of the Actuary.

increase in expenditures for physician services (see Figure 1-2).

The gross national product (GNP) measures the total value of goods and services the nation produces. Health care spending is frequently compared with GNP as a measure of the portion of total national resources used to support health services. Between 1980 and 1989, health expenditures as a share of GNP rose from 9.1 percent to 11.6 percent. Again, preliminary estimates for 1990 show a similar trend. The increase in health spending was greater than the increase in GNP in every year between 1980 and 1989 except 1984 (see Figure 1-3). The service sector in general was expanding as a share of GNP during this time, yet health services grew at twice the rate of all other services.

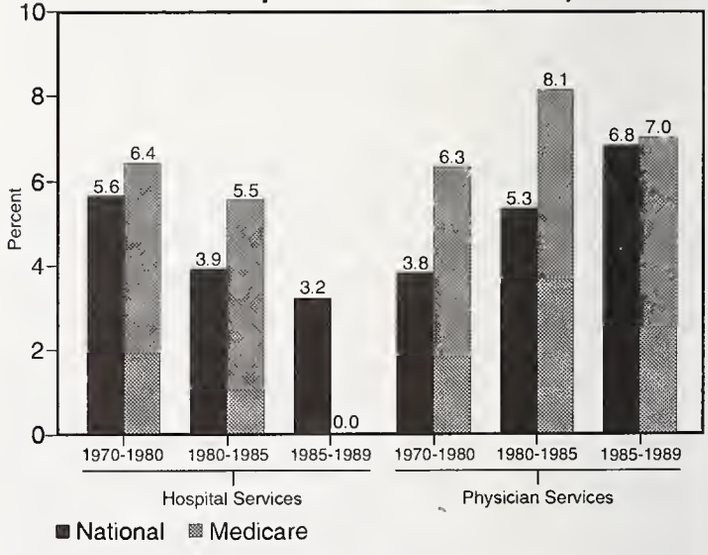
Personal health care expenditures (which by definition exclude spending on program administration and the net cost of private health insurance, research, construction, and government public health activities) also increased dramatically during the 1980s, climbing from $218 billion in 1980 to $531 billion in 1989, or 144 percent. Four

Figure 1-1. Change in Real National and Medicare Total Expenditures, 1970–1989 (Per Capita and Per Enrollee)



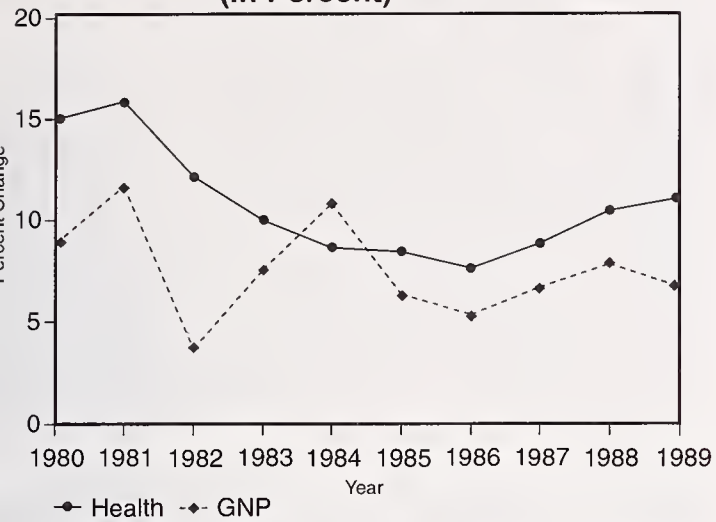
SOURCE: ProPAC updated graph based on information from *Trends in Health Expenditures by Medicare and the Nation*, Congressional Budget Office, January 1991, 42.

Figure 1-2. Change in Real National and Medicare Hospital and Physician Expenditures, 1970–1989 (Per Capita and Per Enrollee)



SOURCE: ProPAC updated graph based on information from *Trends in Health Expenditures by Medicare and the Nation*, Congressional Budget Office, January 1991, 43.

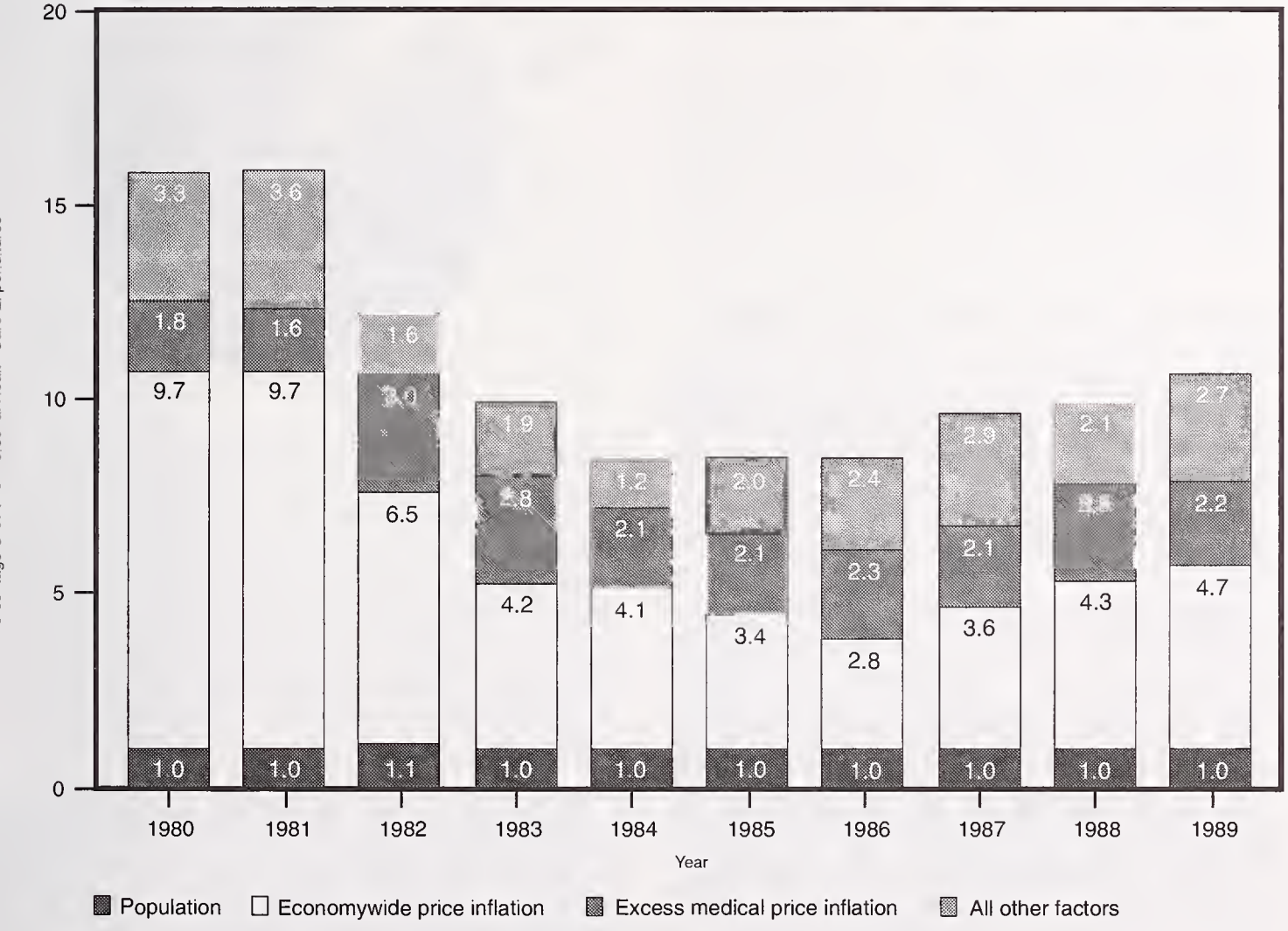
Figure 1-3. Change in National Health Expenditures Compared with Change in GNP, 1980–1989 (In Percent)



SOURCE: Health Care Financing Administration, Office of the Actuary.

factors account for this trend: population growth; economywide price inflation; medical price inflation; and all other factors, which include increases in the use and intensity of health services (see Figure 1-4). Health care spending grew by about one percentage point a year because of population growth. Economywide price inflation was an important component of the spending increases. Nevertheless, almost half of the growth was attributable to the combined effects of medical price inflation and changes in the use and intensity of health services. (Intensity refers to the frequency and complexity of services provided to patients.) From 1965 to 1981, increases in the use and intensity of services outpaced medical price inflation. After 1981, the relationship between these two factors changed from year to year, although their total effect on spending remained generally stable.

Figure 1-4. Reasons for Growth in Personal Health Care Expenditures, 1980–1989



SOURCE: Health Care Financing Administration, Office of the Actuary.

These factors—population growth, economywide price inflation, medical price inflation, and changes in the use and intensity of health services—will determine future spending growth. Trends in inflation and population changes are easier to predict than those in the use and intensity of health services. Projections of future health care expenditures vary, depending on assumptions about whether the demand for services will continue to increase or will be constrained. Current trends have led the Department of Commerce to project health spending increases of 12 percent to 15 percent annually over the next seven years. If this happens, these expenditures may reach $1.3 trillion to $1.5 trillion by 1997.[3]

Congressional Budget Office (CBO) projections are based on lower rates of growth in annual spending than those used by Commerce. The CBO's projected rates of growth are also below those observed between 1980 and 1989. In part, the lower rates reflect assumptions that consumer price sensitivity will restrain the demand for health care. In addition, the lower rates of growth do not account for potential trends in health conditions, such as the spread of AIDS.[4] These assumptions lie behind CBO's projections of an annual increase in health care expenditures of four percentage points above the general inflation rate between 1990 and 2000.[5]

HOSPITALS AND OTHER PROVIDERS

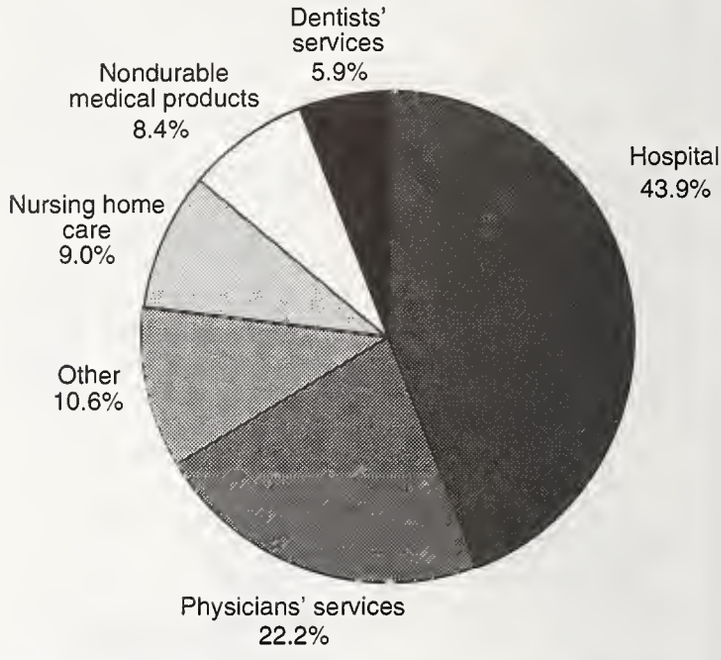
The continued increase in health care spending is related to the structure and financing of health care in the United States. The health care delivery system is highly decentralized, with hundreds of thousands of hospitals and physicians, other providers, and suppliers furnishing services.

During the 1980s, there were significant changes in the utilization, supply, and distribution of spending among providers. This section presents information on trends in spending for hospital and other health services. The major factors underlying these trends are reviewed, and the proportion of spending increases attributable to each is estimated. The pressures facing hospitals and other providers in the current environment and some of the consequences of these pressures are also described.

Trends in Spending

Hospital services have always made up the largest component of personal health care expenditures. In 1989, expenditures for inpatient and outpatient hospital services accounted for nearly 44 percent of expenditures for health services (see Figure 1-5). However, the share of expenditures attributable to hospitals decreased three percentage points from 1980 to 1989. In addition, hospital outpatient services were responsible for a progressively larger share of overall hospital spending. In 1980, inpatient care accounted for 83 percent of hospital revenues. By 1989, this share had fallen to 74 percent.[6]

Figure 1-5. Personal Health Care Expenditures, by Provider, 1989



SOURCE: Health Care Financing Administration, Office of the Actuary.

Total personal health care expenditures for hospital services increased from $102 billion in 1980 to $233 billion in 1989. The annual rate of growth in expenditures for hospital services fell from 16.6 percent in 1980 to a low of 6.8 percent in the mid-1980s. After 1986, the annual rate of growth in expenditures for hospital services began to increase again, reaching 10 percent in 1989.

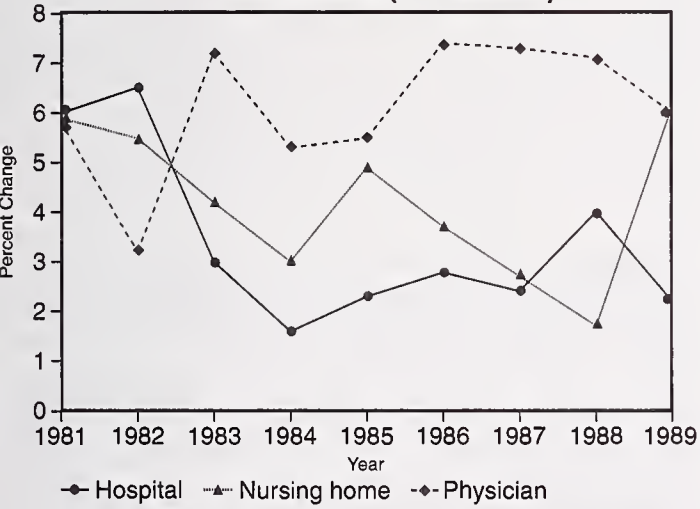
The share of total expenditures for physicians' services was about 22 percent in 1989, an increase of three percentage points over 1980. National spending for physicians' services rose from $42

billion in 1980 to $118 billion in 1989. The annual rate of growth was about 16 percent in 1980 and 1981, and varied between 10 percent and 13 percent each year for the rest of the decade.

Expenditures for nursing home care accounted for 9 percent of all health care spending in 1989—a level that remained roughly the same throughout the 1980s. However, spending for nursing home services more than doubled during the 1980s, rising from $20 billion in 1980 to $47.9 billion in 1989. The annual rate of growth in expenditures for nursing home services varied between 7 percent and 9 percent during the mid-1980s, and jumped to 12 percent by 1989.

The distribution of spending by type of provider has changed significantly in the last 10 years. Spending for hospital services increased more rapidly than spending for physician or nursing home services in the early 1980s, but after 1982 hospital spending slowed considerably (see Figure 1-6). The share of health expenditures accounted for by inpatient and outpatient hospital services has diminished, while the shares accounted for by other providers, especially physicians, have increased.

Figure 1-6. Change in Real Per Capita Health Expenditures, by Selected Providers, 1981–1989 (In Percent)



SOURCE: Health Care Financing Administration, Office of the Actuary.

Trends in Utilization—The trend in the utilization of hospital services was similar to the trend in expenditures. Despite a 1.0 percent increase in the population each year, in 1989 there were 4 million fewer hospital admissions than in 1979, a drop of 11.3 percent. This decline was not spread evenly across hospitals. Rural hospital admissions fell 35 percent during this period, while admissions to urban hospitals decreased by less than 4 percent. By contrast, the utilization of hospital-based ambulatory services grew steadily. In the past 10 years, hospital outpatient surgical operations and visits have increased 44 percent. The changing balance between inpatient and outpatient utilization was one of the most notable characteristics of the period; the use of inpatient services declined and utilization of services furnished in the outpatient setting expanded.

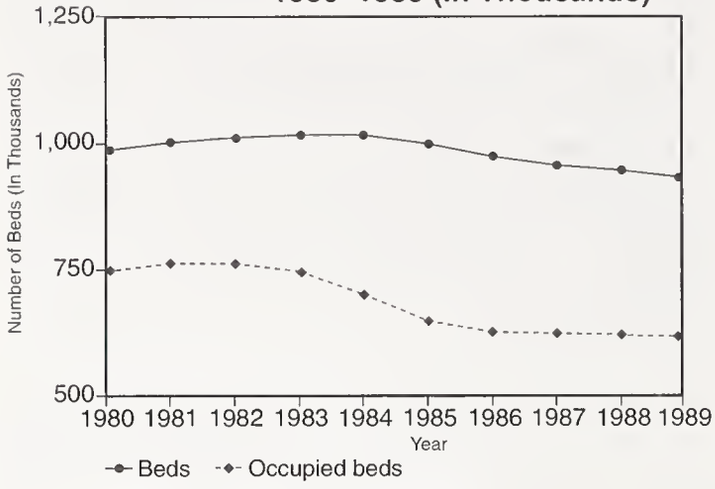
Similarly, and partially as a result of the greater use of the ambulatory setting, utilization of physician services grew throughout the 1980s. The number of physician visits increased 24 percent between 1980 and 1987.[7] There was also dramatic growth in ambulatory surgical services provided by physicians, especially cataract operations and procedures such as colonoscopies. Improvements in technology and medical techniques (the physician's facility with that technology) contributed to the increased utilization of physician services.[8]

The number of nursing home residents also rose in the 1980s.[9] The demand for nursing home care was influenced by increases in both the number of the elderly and people with chronic disabilities. It is estimated that one of every 11 Americans who turned 65 in 1990 will spend at least five of his or her remaining years of life in a nursing home.[10]

Trends in Supply—As the utilization of hospital services changed in the 1980s, the supply of hospital resources changed moderately. The number of hospital beds began declining in 1984 because of increased hospital closures and the removal of beds in hospitals that remained open. The number of occupied beds, however, fell more rapidly than the number of available beds (see Figure 1-7). Hospitals have not reduced the supply of inpatient beds at the same pace as utilization has declined.

Hospitals have adjusted, however, by increasingly providing ambulatory care—the proportion of hospitals with an organized outpatient department rose from 41 percent to 81 percent from the beginning to the end of the decade. Ambulatory surgery services are now available in 95 percent of all community hospitals. In addition, hospitals currently offer more services in distinct-part units

Figure 1-7. Total Community Hospital Beds and Occupied Beds, 1980–1989 (In Thousands)



SOURCE: American Hospital Association.

for inpatient psychiatric care, drug and alcohol treatment, and rehabilitation. Similarly, the supply of competing providers like ambulatory surgical centers (ASCs), urgent care centers, comprehensive outpatient rehabilitation facilities, and diagnostic imaging centers has increased rapidly.

The overall supply of physicians rose 22 percent from 1980 to 1987. There is some evidence suggesting that increases in the supply or changes in the composition of physician specialties resulted in higher expenditures for physician services.[11] Further, the change in supply may have also corresponded with increased expenditures for other related services. Greater supply may have either better matched existing demand or induced new demand. It is clear, however, that increases in overall utilization and intensity boosted the rate of spending for physician services.

The number of nursing homes expanded moderately during the 1980s, although many states imposed a moratorium on new facility construction. Nursing home use may have risen because this care was substituted for services provided in hospitals before the implementation of Medicare's prospective payment system (PPS). Studies show that the utilization and intensity of services provided by nursing homes were affected by PPS.[12] In addition, because the nursing home market is characterized by chronic excess demand in many communities, new supply has led to increased utilization.

Other Reasons for Expenditure Increases— The profitability of hospitals and the level of physician earnings are additional factors increasing health expenditures. Hospital profit margins were, on average, higher in the 1980s than in the 1970s.[13] However, this trend peaked in the mid-1980s. Throughout the decade, the average income of physicians compared with the average compensation of all employees was much higher in the United States than in Canada, the United Kingdom, Japan, and West Germany. In addition, despite increases in physician supply, real physician income increased during the 1980s. Other reasons for the higher expenditures are discussed below in relation to the costs of providing hospital services.

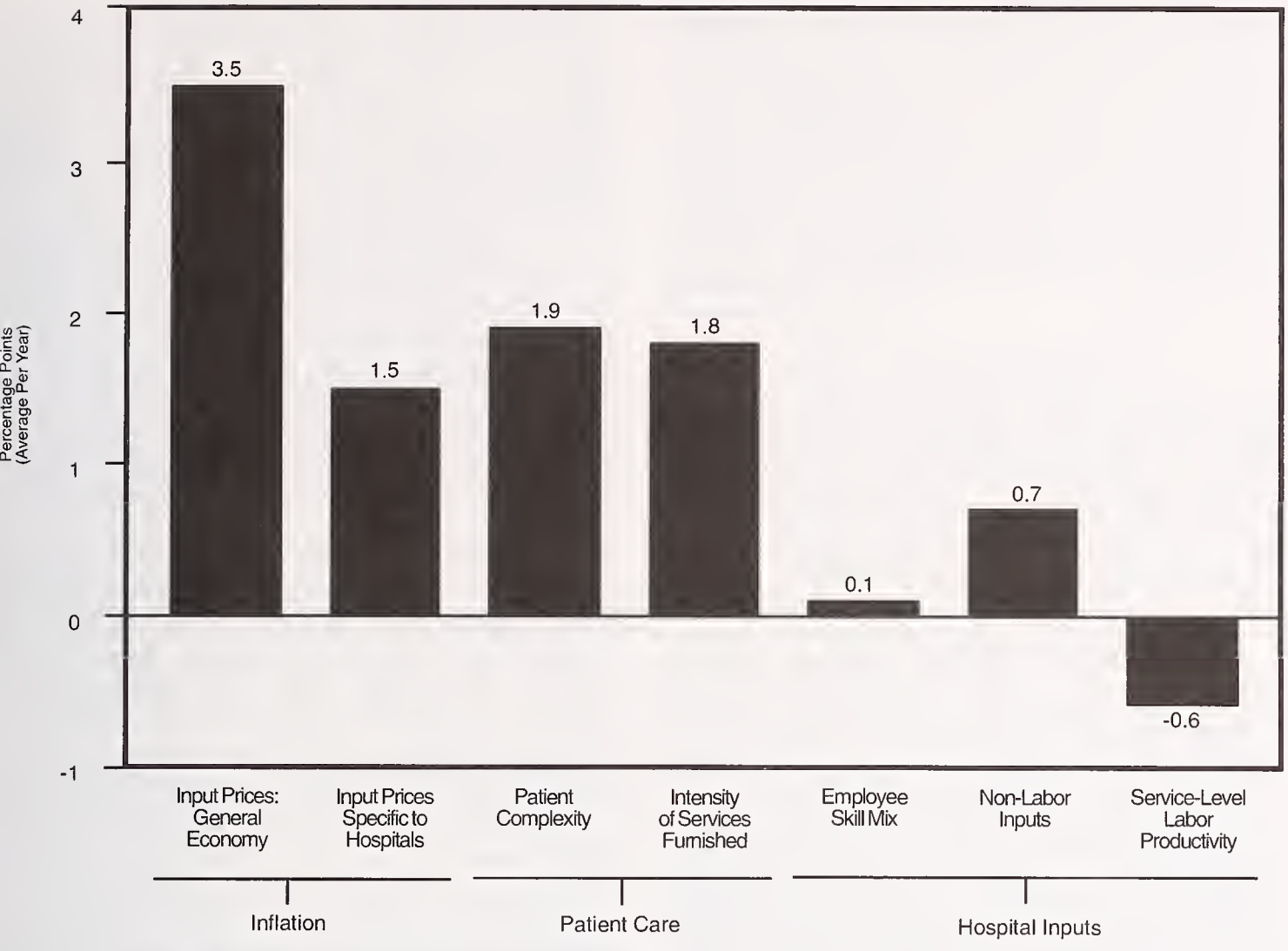
Rise in Hospital Operating Costs Per Admission

Expenditures for hospital services have risen in part because hospital operating costs per admission continued to climb throughout the 1980s. From 1985 to 1989, hospital operating costs per admission grew an average of 8.9 percent per year. The reasons for the growth in operating expenses fall into three broad categories: inflation in the price per unit of labor, supplies, and services; increases in the amount of patient care services; and changes in the hospital inputs used to furnish each service.

Inflation—The largest single contributor to the cost of hospital care was inflation in the general economy, as measured by the Consumer Price Index (CPI) (see Figure 1-8). Economywide inflation accounted for 3.5 percentage points, or about 40 percent, of the average cost increase from 1985 to 1989. Because hospitals compete with other groups for labor and services, they have little control over economywide increases in these prices.

Inflation specific to the hospital industry accounted for an additional 1.5 percentage points, or about 17 percent, of the annual increase in hospital expenses. Hospital inflation includes hospital employee wage increases, which were rising faster than wage rates in the general economy. The increase in the price of hospital labor was partly a response to increased demand for registered nurses (RNs) and other personnel. In addition, wage rates grew substantially for some non-patient care personnel, such as hospital administrative staff. Some non-labor price increases—for example, liability insurance premiums and pharmaceuticals—are also specific to the health care industry. Annual price increases for drugs alone have been two to three times higher than the CPI. Hospitals have limited

Figure 1-8. The Contribution of Inflation, Patient Care, and Hospital Inputs in Increasing Hospital Operating Cost, Per Admission, 1985–1989



Note: The average annual total increase is 8.9 percent.

SOURCE: ProPAC analysis based on data from the American Hospital Asociation, Data Resources, Inc., and the Department of Labor.

control over these increases, although many facilities have developed shared purchasing arrangements to negotiate lower prices with suppliers.

Patient Care—Hospital expenses climb as patients with more complex conditions are treated. In recent years, the complexity of patients treated in hospitals has increased significantly. This trend is due in part to the treatment of less severely ill patients in outpatient settings. As the number of hospital admissions has fallen, the complexity of the remaining cases has risen. In addition, medical advances in areas like transplantation and cancer therapy have led to more complicated treatments. Based on ProPAC estimates, real increases in case mix and patient complexity accounted for 1.9 percentage points, or about 21 percent, of the annual increase in costs per admission.

Hospitals have been treating patients with more complicated conditions as a result of shifts in the site of service, new approaches to diagnosis and treatment, and specific diseases such as AIDS. The additional costs associated with greater case complexity are generally beyond the control of hospitals. In the future, cost increases related to case complexity may slow somewhat because opportunities to move from inpatient to outpatient care appear to be decreasing. However, population aging, advances in diagnosis and treatment, and epidemiological trends are likely to continue adding to case complexity.

Aside from treating more severely ill patients, hospitals have increased the intensity of services furnished to each patient. Changes in intensity were estimated to account for 1.8 percentage points, or 20 percent, of the annual increase in hospital costs per case. Greater intensity has been attributable largely to the development of new technologies and the more frequent use of existing technologies and services. ProPAC estimated that about one-third of the annual cost increase from intensity was due to new advances in technology and two-thirds to the greater use of established tests and procedures.

Service intensity is one of the major areas where significant reductions in the cost of hospital care may be found. The relationship between service intensity and quality of patient care has not been established. However, a growing body of evidence indicates that many tests and procedures are not necessary or at least are of limited value.

Hospital Inputs—Hospital expenses are also related to the mix of labor and other goods used to furnish care, called inputs. Hospitals have significant flexibility in determining the amount and mix of inputs, both labor and non-labor, used to provide services. During the 1980s, hospitals increased their labor skill mix, employing, for example, more RNs and fewer licensed practical nurses (LPNs). A similar pattern was seen in other occupational categories. In addition to changes in the mix of employees, hospitals may also change the quantity and quality of other inputs; they may, for instance, switch to better surgical equipment. These improvements in labor and non-labor inputs are estimated to have contributed 0.8 percentage points, or about 9 percent, to the increase in hospital costs between 1985 and 1989.

The increases in hospital costs were partially offset by greater productivity in the work force. Hospitals have provided individual services more efficiently in recent years, using fewer employees to produce the same set of services. Upgrading skill mix may have helped enhance efficiency. When the gains from producing services more efficiently were balanced against the large increase in services provided per patient, though, the result was a decline in overall industry productivity (as measured by admissions per full-time equivalent [FTE] employee).

Pressures Facing Hospitals and Other Providers

Increases in spending have led to the implementation of a variety of cost containment strategies. While payment has been constrained, expenses have risen as rapidly as in previous periods for hospitals, physicians, and other providers. The following discussion describes the pressures hospitals and other providers currently face.

Cost Containment Efforts—Medicare, Medicaid, and a variety of private payers have exerted pressure on hospitals to reduce their costs by constraining the rate of growth in payments. In addition, the Medicare program has adopted PPS, a payment method designed to encourage hospital efficiency, and has created Peer Review Organizations (PROs) to ensure appropriate utilization.

The Omnibus Budget Reconciliation Act (OBRA) of 1981 gave state Medicaid programs the authority to set payment rates independent of the costs of specific hospitals. Medicaid hospital payments are required to be sufficient to cover the costs of an efficiently operated facility. States have interpreted the requirement in various ways and, as a result, the annual payment updates in some states have increasingly lagged behind increases in hospital costs.[14]

Managed care plans and private insurers have pressed the industry for savings by negotiating payment discounts with individual providers through selective contracting. In these arrangements, hospitals agree to provide discounts to payers in return for guaranteed volume or patient referrals. If the increase in volume is accompanied by a decrease in average costs per case, the hospital may do well. If not, it will have less surplus revenue available for other purposes. To date, there is limited evidence of the impact such selective contracting has had on hospitals or on the actual payments of private carriers. In addition to payment approaches, various charge and utilization review measures have become increasingly popular among private payers as methods to control costs.

Uncompensated Care—Hospitals face an increasing burden in caring for the large uninsured and underinsured population in the United States. The costs of providing care for patients without adequate insurance accelerated during the 1980s,

rising nearly two percentage points per year faster than total hospital costs. This trend was exacerbated by a relative reduction in subsidies from state and local governments. As the uncompensated care burden has grown, hospitals have had difficulty in finding additional revenues to cover these costs. Moreover, at the same time that hospitals have tried to elicit additional revenue from private payers, these payers have striven to reduce their own health care outlays. These factors have placed even more financial pressure on hospitals. (For more information on uncompensated care, see Chapter 2.)

Cost Shifting by Hospitals—In the first few years of PPS, Medicare payments exceeded hospital expenses. Consequently, many hospitals received surplus revenues from the Medicare program. Recently, however, Medicare expenses have surpassed payments. To maintain their financial condition, hospitals must either reduce expenses or find additional revenues to cover Medicare shortfalls. Attempts to increase revenue from one payer to cover shortfalls from another are called "cost shifting," although this may be more appropriately referred to as "revenue shifting."

Historically, as today, hospitals have subsidized the care of some patients or the provision of particular services. As Medicare, Medicaid, and private payer programs have implemented cost containment initiatives, hospitals have found it increasingly difficult to obtain additional revenues. Nevertheless, the pluralistic financing system continues to allow hospitals to seek revenues from some payers to cover shortfalls from others, as well as to cover the costs of uncompensated care.

In the future, if hospital expenses increase at a faster rate than revenues, hospitals will seek additional revenues from payers and other income sources. Another strategy hospitals may increasingly adopt, however, is to attempt to reduce the number of uninsured patients they treat.

Challenges to Tax-Exempt Status—Both increased fiscal pressure on governments and a trend toward hospital diversification have caused policy makers and government officials to look more closely at nonprofit hospitals' tax-exempt status. Some have questioned whether the value nonprofit hospitals provide to the community measures up to the tax breaks they receive.

The tax exemptions enjoyed by nonprofit hospitals have an estimated value of $8.5 billion per year, including $4.5 billion from the Federal government. In return for this favored status, hospitals are supposed to provide services that benefit the community. In 1969, the Internal Revenue Service (IRS) defined "community benefit" as keeping an emergency room open to all and participating in the Medicare and Medicaid programs. Additionally, tax-exempt hospitals may not restrict the use of their facilities to a particular group of physicians, and hospital earnings may not directly benefit individuals.[15]

In its five-state study assessing the role of nonprofit hospitals in providing uncompensated care and other community services, the General Accounting Office (GAO) concluded that, for many nonprofit hospitals, the link between nonprofit status and the provision of charity care was weak.[16] This is consistent with ProPAC's finding that the proportion of costs devoted to uncompensated care varied substantially within virtually all hospital groups.

There have been a number of challenges to specific hospitals' tax-exempt status, some of which have resulted in litigation. Revised tax exemption standards developed by governmental entities other than the IRS generally define a more stringent, quantitative charity care standard. Some experts believe that requiring hospitals to account dollar-for-dollar for the benefits delivered to the community may result in delivering less rather than more charity care, for example. In any case, the debate surrounding nonprofit hospitals' tax-exempt status has increasingly pressured these hospitals to justify their preferred status, not only in court but also to their communities.

Recently, the Catholic Health Association (CHA) and New York State have provided guidance and requirements, respectively, on steps hospitals can take to defend their tax-exempt status. The CHA recommends assessing the needs of the community, quantifying the activities of the hospital that respond to those needs, and communicating the results back to the community.

Hospital Closures—Constraints on revenues, together with declining admissions, have created financial difficulties for many hospitals, especially

those in rural areas. From 1980 to 1990, more than 500 community hospitals closed their doors or were converted to nonacute care use. After the implementation of PPS, the number of closures per year increased, ranging from 45 to 85.[17] The number of hospital closures peaked in 1988 (at 85) and declined thereafter.

A ProPAC study of hospitals that closed between 1985 and 1988 showed that these hospitals had large declines in total admissions before they ceased operation. Occupancy rates were between 30 percent and 35 percent lower in the year before closure compared with hospitals that remained open.[18] The number of full-time employees per admission was consistently higher before closure than in other hospitals, indicating lower productivity.

Rural hospitals that closed had offered a less diversified mix of inpatient and other patient care services than hospitals that remained in operation. They also offered fewer high-technology services than other hospitals.[19] Urban hospitals that eventually closed had higher costs per case and longer average lengths of stay in the years before closure compared with similar hospitals that stayed open.

The closure of rural hospitals has raised concerns about access to care for residents of rural communities, despite the fact that these hospitals were not operating efficiently and offered fewer services. Nonetheless, studies have shown that, on average, rural residents have higher inpatient utilization rates than urban residents.[20] Certain groups of rural residents, however, may forgo needed inpatient services after the hospital in their community closes. Many rural residents may still face access barriers to emergency, primary, and long-term care services. (See Chapters 2 and 4 for more discussion of hospital closures and beneficiary access.)

A number of public hospitals, while not shutting down completely, have reduced their size, eliminated some services, or closed units. Downsizing of public hospitals may reduce access to care for low-income patients. In some cases, these patients may receive needed care at other hospitals, increasing the financial pressure on those hospitals. In other cases, these persons may lack access to health care services in their own community.

Physicians—The growth of managed care, changes in reimbursement policy, and the cost of malpractice insurance premiums have added to the pressures confronting physicians. Cost containment in the 1980s centered primarily on hospitals. In the 1990s, cost containment will likely focus on physicians through expenditure targets for Federal programs, increased utilization review, and the development of practice guidelines.

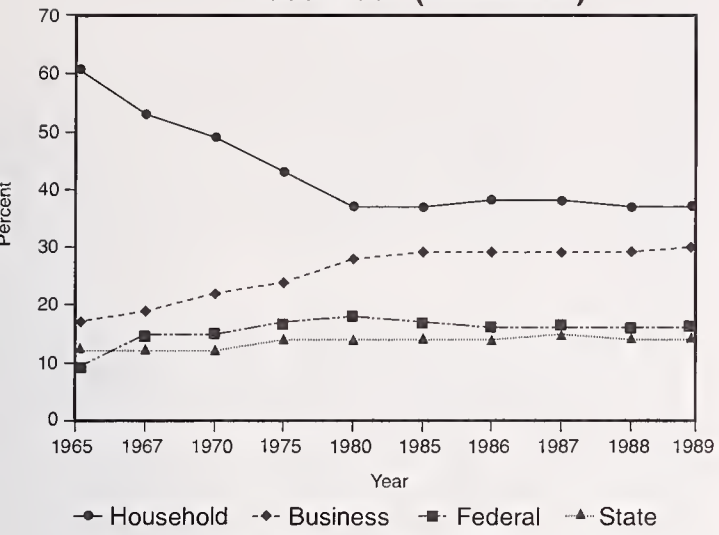
Nursing Homes—Changing reimbursement policies and eligibility requirements have also affected nursing home providers. Much of the eligibility and payment rate instability was a result of the passage and subsequent repeal of the Medicare Catastrophic Coverage Act of 1988 (MCCA), which would have provided some protection against the cost of catastrophic illness and long-term care. In addition, Federal requirements related to the quality of care provided in nursing homes have been strengthened, further pressuring these facilities. OBRA 1987, for example, established higher training and staffing requirements for nursing homes. Because nursing homes are primarily staffed by entry-level employees, nursing home providers will also be directly affected by the April 1991 change in the Federal minimum wage.

PAYERS

The spending for health care, utilization of services, and supply of providers described above are all affected by the way health care is financed. In the United States, health care is paid for by individuals, businesses, and the Federal and state governments. The share of health care spending by the major sources of payment remained stable throughout the 1980s (see Figure 1-9). The rapid rise in total health care spending, however, outpaced the rate of increase in government revenues, business receipts and profits, and the income of some segments of the population. Spending on health care has thus become a more significant expense for all payers.

Many of these payers have reacted to the increased burden of health spending by trying to contain costs. Cost containment efforts may consist of reducing payment to providers; negotiating discounts on services; reducing utilization of services; reducing benefits offered to individuals; and increasing cost sharing through higher premiums, deductibles, or coinsurance. Cost containment approaches adopted by government and private payers are described below. The section on each payer ends with a discussion of the outlook for the future.

Figure 1-9. Health Expenditures, by Sources of Payment, 1965–1989 (In Percent)



Note: Household expenditures include premiums and all out-of-pocket spending (copayments, deductibles, and other expenses).

SOURCE: Health Care Financing Administration, Office of the Actuary.

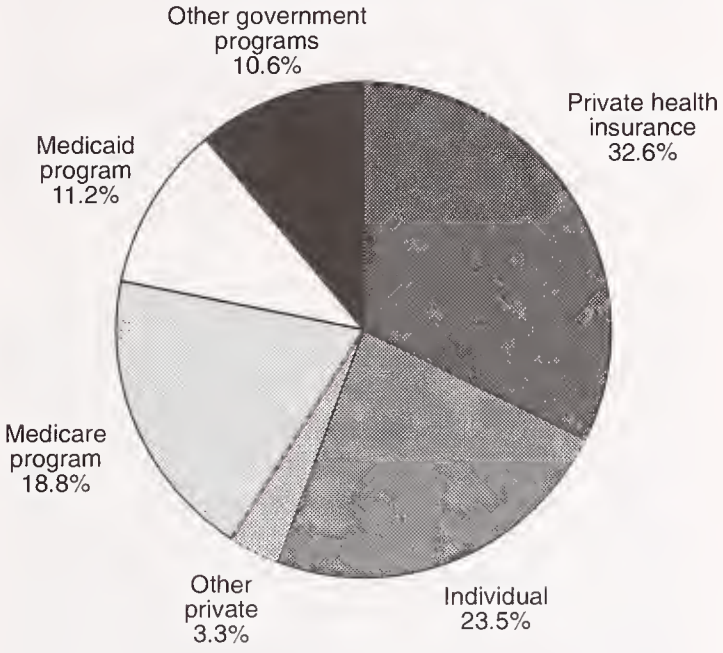
Health care expenditures by the different payers support various aspects of the health care system. Federal government expenditures consist of receipts from Medicare payroll taxes and general tax revenues to fund Medicare, Medicaid, and other health programs, as well as health insurance for Federal employees.[21] State government expenditures are made up of spending for Medicaid, Medicare payroll taxes and health insurance for state employees, hospital subsidies, and other health programs. Expenditures by businesses go toward the employer share of private health insurance premiums, Medicare payroll taxes, workers' compensation, and other health programs. Individuals pay for health insurance premiums, Medicare payroll taxes, and out-of-pocket costs.[22]

The Medicare program receives funds from payroll taxes, premiums paid by individuals, interest income on the Medicare Trust Fund, and general tax revenues. Similarly, the funds for private insurance come from businesses, individuals, and governments. These pools of funds and the programs they support are discussed below.

Government

Expenditures for government health care programs represented about 41 percent of all personal health care expenditures in 1989 (see Figure 1-10). Government health expenditures increased by $23 billion in 1989, to $215 billion. The Federal government spent 12 percent more on health in 1989 than in 1988. Compared with other major domestic components of the Federal budget, health expenditures increased as a share of the Federal budget at a rate second only to interest on the national debt during the 1980s (see Figure 1-11). State governments spent 12 percent more for personal health care in 1989 than in 1988. Medicaid spending has increased as a proportion of state

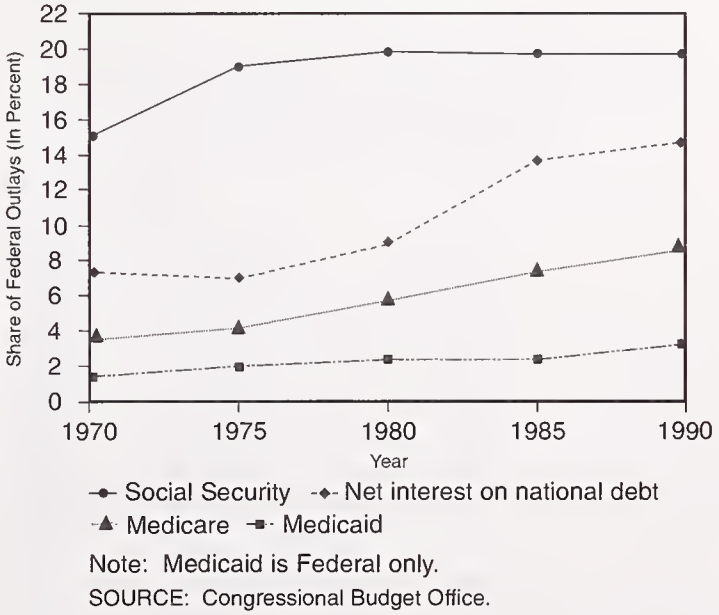
Figure 1-10. Personal Health Care Expenditures, by Program, 1989



Note: Individual excludes premium payments.

SOURCE: Health Care Financing Administration, Office of the Actuary.

Figure 1-11. Federal Outlays for Selected Categories, 1970–1990 (In Percent)



Note: Medicaid is Federal only.

SOURCE: Congressional Budget Office.

budgets as well. In 1970, Medicaid accounted for 4 percent of state spending; by 1990, it had risen to 14 percent.[23]

Medicare—Medicare currently represents 63 percent of all Federal expenditures on health care and 19 percent of personal health care expenditures. In the 1980s, Medicare spending increased at a faster rate than expenditures for other government health care programs: Medicaid, the Department of Veterans Affairs (VA), and the Department of Defense (DOD) health programs (including the Civilian Health and Medical Programs of the Uniformed Services or CHAMPUS). Medicare spending also increased faster than total national health spending until the mid-1980s. The annual rate of growth in Medicare spending was 21 percent in 1980. It fell each year until 1986, when it began to increase again—a trend that lasted until the end of the decade.

The rate of increase in real Medicare spending varied considerably by site of service (see Table 1-2). Most of the decline in Medicare's rate of growth in the 1980s, compared with the 1970s, was due to lower rates of increase in inpatient hospital expenditures. After adjusting for inflation and the number of enrollees, the rate of increase in Medicare inpatient hospital payments has been close to or less than zero since 1984 (Figure 1-2). Although the rates of growth in spending for outpatient hospital and physician services also decelerated in the 1980s, these rates did not slow as much as those for inpatient hospital services.

Medicare Cost Containment—In 1980, the Congress began an annual process of budget reconciliation. Each year, a budget reconciliation bill institutes legislative changes in programs and expenditures. The annual reconciliation process uses baseline estimates to forecast spending increases, and reductions from these forecasts are counted as savings. These so-called budget savings have been frequently misunderstood. The reported savings are not reductions in actual spending; they are reductions in the projections of the rate of growth.

Table 1-2. Change in Real Medicare Benefit Payments, by Selected Type of Service, 1981-1989 (In Percent)

Year	Part A Inpatient Hospital	Part B Outpatient Hospital	Part B Physician
1981	9.8%	9.0%	9.8%
1982	9.5	12.5	13.9
1983	6.8	12.2	12.4
1984	7.0	9.2	5.2
1985	2.1	12.0	5.8
1986	2.0	17.2	10.8
1987	-0.3	3.3	8.4
1988	1.2	9.3	7.4
1989	1.6	7.7	4.7

SOURCE: Health Care Financing Administration, Office of the Actuary.

Medicare disbursements increased from $35 billion in 1980 to $110 billion in 1990. According to CBO, legislative changes reduced Medicare spending to about 82 percent of what would have been otherwise anticipated. CBO also estimated that the reduction from the projected trend in expenditures caused by legislation was proportionately greater for physician and outpatient services than for inpatient hospital services.[24] However, the actual growth in expenditures for hospital services has been more constrained than the growth in expenditures for physician services.

Legislative changes resulted in pressures on the providers of health care. However, even though Medicare cut the payments for services to providers, the total payments to physicians and hospitals increased. Hospitals have responded to cost containment efforts in a variety of ways, including decreasing average length of stay, adopting new management strategies, and adjusting staffing practices. How physicians have responded to legislative changes is less clear. For example, there was a large jump in the volume of physician services in 1986. The increase in volume may have been caused by physicians' responses to the 1986 freeze on physician fees, by beneficiaries' responses to the reduction in their out-of-pocket costs due to the physician participation program, or by some other factor.[25]

Medicare Outlook for the Future—Total Medicare Part A outlays (inpatient hospital, skilled nursing facility [SNF], hospice, and home health) are projected to increase $46 billion for fiscal years 1991 through 1996 (see Table 1-3). Medicare inpatient outlays are projected to increase an average of 8.9 percent per year between fiscal years 1990 and 1996. By contrast, Part B outlays (physicians, other providers, and outpatient hospital) are projected to increase $41 billion for fiscal years 1991 through 1996. During this period, Part B outlays

Table 1-3. Medicare Baseline Estimates, 1990-1996 (In Billions)

Year	Part A Outlays	Part A Annual Increase	Part B Outlays	Part B Annual Increase	Medicare Outlays and Premiums Total*	Part B Premiums	Net	Annual Increase in Net Medicare Outlays
1990	$ 66.7		$43.0		$109.7	$11.6	$ 97.9	
1991	70.1	5.1%	46.4	8.0%	116.5	11.6	104.7	7.0%
1992	77.7	10.8	52.1	12.2	129.8	12.5	116.9	11.6
1993	84.5	8.7	58.6	12.6	143.1	14.3	128.3	9.8
1994	93.2	10.3	65.8	12.2	158.9	16.3	142.1	10.8
1995	102.7	10.2	74.2	12.8	176.9	18.5	157.7	11.0
1996	113.2	10.3	84.0	13.1	197.2	19.8	176.7	12.1

* Total also includes Part A purchased coverage.

SOURCE: Health Care Financing Administration, Office of the Actuary.

for physicians are expected to increase 9.9 percent per year and hospital outpatient services, 15.4 percent per year.

In the Administration's proposed budget to the Congress for fiscal year 1992 for the Medicare program, reductions in payments to hospitals would result in budget savings of $13.5 billion in fiscal years 1992 through 1996, compared to what is otherwise projected. These changes include reducing payments to hospitals for the direct and indirect costs of medical education, delaying hospital payment rate updates by three months in every year, and lowering payments to hospitals for outpatient services.

Proposed changes for physician payment would save $2.1 billion in fiscal years 1992 through 1996. These changes include a reduction in the 1993 payment update for physicians and changes in the reimbursement method for anesthesia services, surgical services, and radiology and diagnostic tests.

In sum, the 1992 budget included proposed savings of an estimated $27.4 billion from Medicare in fiscal years 1992 through 1996. About 49.3 percent of this amount would come from hospital payments, 7.7 percent from changes in Part B payments, and the rest from changes in beneficiary coinsurance for laboratory services and reductions in payments to other providers. In addition, the proposed budget includes costs to expand the role of health maintenance organizations (HMOs) and preferred provider organizations (PPOs) in the Medicare program.[26]

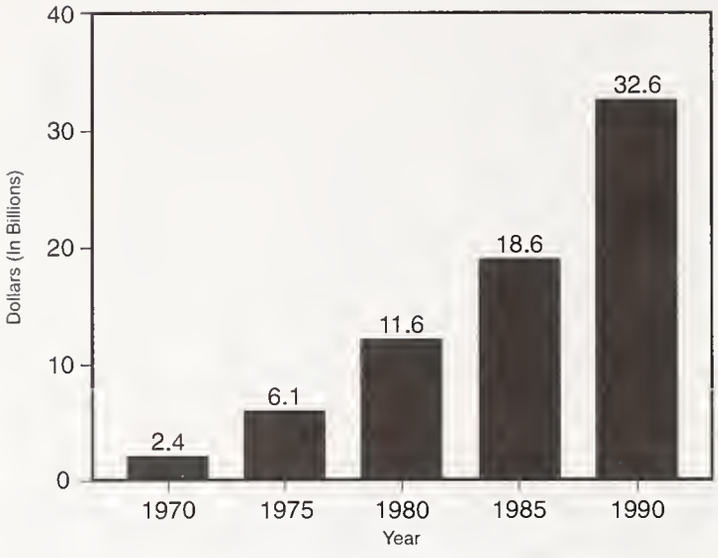
As Medicare consumes an increasing share of the Federal budget, it will likely remain a target for proposed budget savings. Proposals to curb costs will become more important as the current trends in demographics, health conditions, and health services delivery continue.

Medicaid—Medicaid, a medical assistance plan for certain vulnerable populations, is jointly funded by the Federal and state governments and administered by the states. The Federal government varies its rate of contribution by the per capita income in the state. States with lower average incomes receive a higher matching rate of Federal funds. While some benefits and eligibility criteria are required by the Federal government, states can exercise considerable discretion in their Medicaid payments, benefits, and eligibility.

Medicaid spending accounts for 25 percent of government health spending and 10 percent of total U.S. health care expenditures. The Federal share of Medicaid expenditures rose from 55 percent to 57 percent between 1980 and 1989. It appears that an increasing share of Medicaid payments may be going to poorer states with higher proportional rates of Federal reimbursement. Since 1985, Federal expenditures for Medicaid have increased more rapidly than those for Medicare. Similarly, the growth in state spending for Medicaid accelerated after 1985 (see Figure 1-12).

Medicaid primarily covers poor people with specific characteristics—those who are aged, blind, disabled, single parents, or children of single parents. Medicaid is a major payer of long-term care and often covers nursing home residents who in their working life were not poor. In 1975, 63 percent of the population below the poverty level were covered by Medicaid. Currently, Medicaid covers 42 percent of those below poverty.[27]

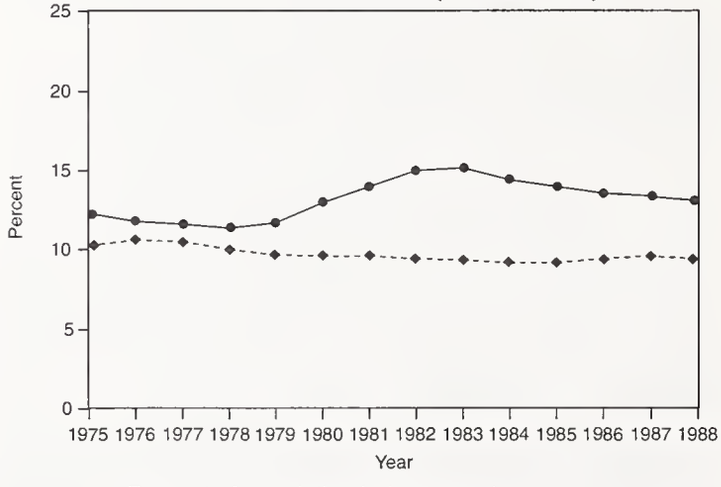
Figure 1-12. State Medicaid Spending, 1970–1990 (In Billions)



SOURCE: National Association of State Budget Officers.

Although the proportion of people living below the poverty level has increased since 1979, the proportion covered by Medicaid has not (see Figure 1-13). Federally mandated eligibility restrictions required by OBRA 1981 limited the number of people who could obtain Medicaid in the early 1980s.

Figure 1-13. Medicaid Recipients and Persons Below Poverty, 1975–1988 (In Percent)



Note: Medicaid population includes persons with incomes above poverty.

SOURCE: 1975 to 1984 Medicaid recipients: Health Care Financing Administration, *Health Care Financing Program Statistics, Medicare and Medicaid Data Book, 1988.* 1985 to 1988 Medicaid recipients and poverty data: U.S. Bureau of the Census, *Statistical Abstract of the United States: 1990,* 110th ed.

State Medicaid programs have increasingly covered single pregnant mothers and their children whose family incomes are above the poverty line. Coverage of single pregnant women who have children and whose incomes were up to 133 percent of the poverty line was required in OBRA 1989. Almost all states (44 out of 50) had begun voluntarily covering this group by that time. The trend toward providing Medicaid coverage for pregnant women and children with incomes above the poverty level has continued into the 1990s.

In 1989, Medicaid paid for 9.8 percent of all hospital services, 3.6 percent of physician services, 43.1 percent of nursing home services, and 36.0 percent of home health care services. The share of nursing home services paid by Medicaid declined six percentage points between 1980 and 1989. Conversely, the share of all home health services paid for by Medicaid increased almost 13 percentage points.

Medicaid Cost Containment—In OBRA 1981, states were given greater flexibility with regard to setting Medicaid payment rates, benefits, and eligibility rules. This resulted in changes in hospital payment systems, which no longer had to be based on Medicare reimbursement principles. (Previously, some states had obtained waivers from the Health Care Financing Administration [HCFA] to structure their payment systems differently from Medicare's.) To contain costs, many states designed new payment systems for hospitals. California, for example, directly negotiated prices with hospitals and excluded from the program those that did not meet certain price criteria.[28] Many states introduced prospective payment systems. In addition, a number of states restricted eligibility requirements, which led to a drop in the proportion of poor people covered by Medicaid. Other states restricted benefit coverage or instituted managed care programs. From 1987 to 1990, the number of Medicaid recipients enrolled in capitated managed care plans increased by 19 percent. Medicaid programs are administered differently in every state and territory, and so the cost containment approaches used in the program vary considerably.

Medicaid Outlook for the Future—The CBO has projected Medicaid outlays to rise to $89 billion in 1991 and to $166 billion in 1996. This is partially a result of continuing eligibility expansions for pregnant women and for children. Further, states

may have to increase payment rates as a result of legal challenges to the adequacy of Medicaid payment rates. It is difficult to predict the effect of these program changes on overall Medicaid spending, however, as states may change eligibility or benefit coverage to lower costs.

Other Government Programs—Other Federal and state health expenditures (more than $10 billion) include the VA and the DOD health programs, workers' compensation, and state and local government hospital subsidies. The VA represents about 6.7 percent and the DOD health programs account for 6.5 percent of Federal health expenditures. Workers' compensation accounts for 21 percent and state and local subsidies for 24 percent of all state health expenditures.

Roughly 80 percent of expenditures for the DOD and the VA health programs are for hospital services. About 50 percent of state workers' compensation spending goes toward hospital services; 43 percent pays for physician services.

Health expenditures for both the DOD and the VA increased, on average, more slowly than expenditures for the Medicare program during the 1980s (see Table 1-4). In particular, VA expenditures increased at half of Medicare's rate of increase. Expenditures for workers' compensation increased, on average, faster than Medicaid spending, while payments for state and local hospital subsidies increased, on average, more slowly than Medicaid spending.

These government health care payers have developed different cost containment approaches. Workers' compensation programs, both Federal and state, are exploring various methods of cost containment. The Federal government and some states have adopted fee schedules for physicians; fee schedules for hospital services are in the process of being implemented. Second opinion programs, early intervention, and case management programs are also being considered.

The VA has several cost containment programs in place. The VA Medical Centers began operating under a prospective per-case budgeting system in 1985. The VA recently implemented improved information systems and discharge planning. In addition, the VA limits eligibility to service-connected injuries and to individuals meeting certain income eligibility requirements. The CHAMPUS program, which covers services provided to active duty and retired persons in the armed services and their dependents outside DOD facilities, currently pays on a fee-for-service basis. However, the program is involved in several managed care demonstrations.

Employer-Sponsored Private Health Insurance

Private health insurance in the United States has traditionally been tied to the workplace. About 77 percent of the cost of private health insurance is paid by employers and the rest by individuals. The share of total personal health expenditures paid by private health insurance increased during the 1980s, accounting for roughly a third of all personal health expenditures in 1989. This trend occurred because premiums, which are attributed to insurance, rose whereas out-of-pocket spending, which is attributed to individuals, fell.

Table 1-4. Change in Expenditures for Government Health Programs, 1980-1989 (In Percent)

	Federal			State		
Year	Medicare	Department Of Veterans Affairs	Department of Defense	Medicaid	Workmen's Compensation	Other State and Local Aid to Hospitals
1980	21.1%	11.9%	14.6%	20.4%	11.8%	-0.6%
1981	20.4	9.9	15.7	13.3	12.2	13.0
1982	17.1	9.5	13.9	11.7	13.9	6.2
1983	13.8	7.5	6.3	9.2	11.5	2.4
1984	10.2	10.1	7.6	9.0	13.5	-1.8
1985	9.2	3.2	16.7	6.0	17.1	5.0
1986	6.9	5.4	9.9	6.3	15.8	27.3
1987	8.1	4.8	10.5	15.1	14.9	12.7
1988	9.0	4.4	5.0	4.3	11.2	10.3
1989	12.8	5.7	5.9	12.9	10.9	12.2

SOURCE: Health Care Financing Administration, Office of the Actuary.

Private health insurance is a major payer for hospital and physician services, but not for long-term care. Insurance companies paid for about 36 percent of all hospital care, 48 percent of physicians' services, and 1 percent of nursing home care. Private insurers financed about the same proportion of hospital services in 1989 as in 1980, but their share of payments for physician services increased by five percentage points during this period.

Health insurers raised their premiums for family coverage about 15 percent in 1990, according to the 1990 Health Insurance Association of America (HIAA) survey.[29] Premiums for individual coverage rose 13 percent. This marks the fourth consecutive year that premiums have increased, although the rates of growth were lower than in 1989. Premiums went up more for small companies than for large firms. However, 15 percent of all firms experienced no change in monthly premiums, while 5 percent had a decline in costs.

The proportion of health care expenditures paid for by employers did not change in the 1980s. Private insurance's share of personal health care expenditures did grow as a result of increases in the premiums paid by individuals. The growth in the absolute level of employer health care spending increased sharply. Health benefits now represent a larger portion of employer revenues and profits than ever before, even though employers are not paying a larger share of the health care bill.[30]

Pressures Facing Employers—From 1985 to 1989, the employer cost of providing medical and dental insurance increased by more than 56 percent. In 1989, these benefits accounted for 7.6 percent of payroll costs; the costs associated with health benefits were rising about three times faster than salaries and wages.[31]

The pressure created by the rapid growth in health benefit costs led employers to institute changes to contain these costs. There has been an almost complete shift away from traditional fee-for-service packages to modified fee-for-service plans featuring utilization review and to managed care. In addition, many companies, especially large ones, self-insure instead of purchasing health insurance.

Along with providing benefits to current workers, employers may offer benefits to retirees, further increasing the portion of their expenses related to health care. Employer-sponsored post-retirement health benefits (PRHBs) are a major source of health benefits for younger retirees (68 percent of retirees 55 to 64 years old in 1987 were covered by such plans). These benefits are typically offered by larger firms and in certain industries (see Chapter 4). The rate of growth in spending for PRHBs has been increasing throughout the 1980s. In 1993, employers will be required by the Financial Accounting Standards Board (FASB) to report unfunded PRHB liabilities in their financial statements. Some predict that, under the new reporting rules, PRHBs may account for as much as 6.25 percent of companies' payroll expenses, up from 2.5 percent in 1990.[32] These pressures may force employers to restructure benefits as well as pursue prefunding strategies.

Cost Containment in the Health Insurance Market—During the mid- to late-1980s, most employers incorporated managed care into their health benefit packages. By 1990, only 5 percent of all enrollees in employer-sponsored group health insurance were covered by traditional indemnity insurance with no utilization management programs. Blue Cross and Blue Shield plans and conventional insurers added programs such as preadmission authorization, concurrent review, and case management.

Many employers offered benefits through health maintenance organizations and preferred provider organizations. The growth in HMOs and PPOs reduced the market share of traditional service benefit and indemnity insurance.[33] The number of HMOs has more than doubled—and the number of enrollees has tripled—since 1981. The number of operating HMOs fell from a peak of 650 in 1987 to 556 in mid-1990. The number of enrollees continued to grow, reaching 33.6 million in 1990.[34] The decline in the number of HMOs was a result of closures, mergers, and consolidations. PPOs have made even greater inroads against conventional indemnity insurance. In 1990 there were 806 PPOs, down from 814 in 1989. The number of individuals eligible to use PPOs rose to between 60 million and 65 million in 1990, compared with between 50 million and 60 million eligible members in 1989.[35]

While the share of health expenditures attributable to direct patient payments (copayments,

deductibles, and payments for uninsured services and balance billing) has declined, employees were generally paying a larger share of total premiums in 1990, according to the HIAA survey. Employees with family coverage tended to pay a higher share of their premium costs than those with individual coverage. The increase in cost sharing was the greatest for employees with family coverage from staff/group HMOs and managed conventional plans. The only employees whose share of monthly premiums fell were those with family coverage in a PPO or policies with independent practice associations. Further, more employees had copayment requirements in 1990 than in 1989. In all types of plans, average deductibles rose, especially in HMOs.

Changing the benefits offered to employees is another strategy for containing costs. The HIAA survey did not report many employers reducing their benefits. Conventional plans generally offered the fewest services. However, between 1989 and 1990, these plans extended coverage of home health care and substance abuse to more employees and maintained coverage for most other services. PPOs tended to offer more benefits than conventional insurers, but fewer than HMOs. PPOs expanded coverage in all areas except well-child care and general dental care. HMOs generally offered the most benefits, although coverage was reduced slightly for all services except dental care. They were much more likely to cover adult physical exams, well-child care, and home health care.

A growing number of employers (and unions) have chosen not to purchase insurance in an attempt to control their costs. These organizations assume the financial risk of health insurance by fully or partially self-insuring. In 1989, self-insured employers covered 56 percent of all insured employees. (Commercial insurers covered 26 percent of employees and Blue Cross/Blue Shield plans, the remaining 18 percent.)[36] Because self-insured firms pay claims after they are incurred, they can hold their cash longer and earn interest to partially offset claims costs. Further, self-insured plans are exempted from state-mandated benefits and reserve requirements and are not subject to state premium taxes. Whereas large firms were the first to self-insure, medium-sized firms are continuing the trend.[37] Self-insured companies generally purchase administrative services from insurance companies to process claims and manage utilization control programs.

Small Employers—Although private health insurance in the United States is strongly tied to the workplace, many small employers do not offer health insurance to their employees.[38] In 1990, the HIAA survey found that only 36 percent of firms with fewer than 25 employees offered health coverage. This reflects the fact that health insurance is expensive for both the employees and employers. The cost of the employee share of insurance coverage is prohibitive for many minimum wage or part-time employees.

Among other factors that affect the access of small employers to the insurance market are the methods that private insurance companies use to set rates. Today, few insurers set premiums based on the expected costs of a community, or group, of employers. Most insurers now differentiate premiums based on the claims experience of the individual employer. Many small employers are rejected or have limited coverage and pay high rates because of the characteristics of their business or the health status of their employees. In addition, administrative expenses and other costs are spread over fewer policies and are often higher for small groups.

State-mandated benefits are another important issue often raised in the debate about the problems facing small employers. States have required insurers to cover specific providers, benefits, diseases, and categories of people. Only employers that purchase insurance must offer these benefits because self-insured employers are exempt by Federal law. However, there is considerable disagreement about the additional costs of mandated benefits. Some argue that premiums are higher and plans cannot be designed to meet small employers' needs when benefits are mandated. Others point out that some of the mandated benefits are common among self-insured firms and may not make insurance policies more expensive. The issue is complicated by the concerns of large employers that believe they are paying for the care of the uninsured through higher premiums. Recent information shows that more and more states are exempting insurers from mandated benefits in the hopes of making insurance more affordable for small employers.

Individuals

Although Medicare and private insurance provide financial protection from health care costs, insured individuals with both types of coverage still pay directly for some portion of their health care expenses. This section describes trends in expenditures made by individuals: private health insurance premiums; Medicare premiums; and out-of-pocket costs (deductibles, coinsurance, payments for uncovered services, and balance bill expenses). Separate descriptions of the health care expenses of Medicare beneficiaries and other individuals follow.

Trends in Expenditures—Household health expenditures consist of out-of-pocket spending, the employee share of private health insurance premiums, Medicare health insurance premiums, and the employee payroll taxes for Medicare Hospital Insurance (HI). Household spending has accounted for about 37 percent of all health care spending since 1980. While the proportion of all health care spending did not change over the decade, the distribution of household spending shifted from out-of-pocket costs to premiums.

The decline in out-of-pocket costs as a share of total costs may have been related to the spread of managed care organizations, which typically require low deductibles, have no or limited coinsurance, and cover more services. The rise in employee contributions to private health insurance premiums represents a shift in expenses from employers to employees. While employer contributions grew about as fast as total health care spending (145 percent and 152 percent, respectively) from 1980 to 1989, employee contributions accelerated more rapidly (228 percent).

The employee share of private health insurance premiums escalated from 5.8 percent of total spending in 1980 to 7.8 percent in 1989. The two-percentage-point gain reflects an increase from $14 billion in 1980 to $46 billion in 1989. Medicare premiums paid by individuals as a share of total spending climbed from 6.2 percent to 7.8 percent. Out-of-pocket spending accounted for 21.4 percent of total spending in 1989, down from 24.5 percent in 1980. The rate of increase in out-of-pocket expenses averaged 8 percent a year; it was about $9.3 billion from 1988 to 1989.

Medicare Beneficiaries—The elderly receive health insurance coverage for hospital, physician, and other acute care services through Medicare. There is cost sharing for Medicare-covered services. Medicare beneficiaries pay deductibles and coinsurance for Part A Hospital Insurance, as well as premiums, deductibles, and coinsurance for physician services and other Part B services. (For more information on beneficiary liabilities, see Chapter 4.)

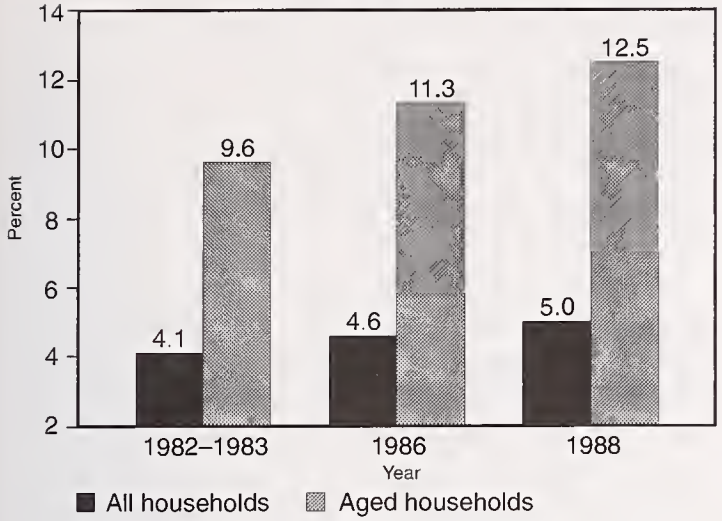
Most Medicare beneficiaries have supplemental insurance to cover Medicare cost sharing. The supplemental insurance policies, known as medigap, generally provide reimbursement only for Medicare-covered services. Medicaid pays Medicare cost sharing expenses for poor elderly who qualify. In 1988, about 68 percent of beneficiaries had private medigap policies, another 10 percent were covered by Medicaid or other public programs, and 23 percent had no supplemental insurance.

Medicare and most of the supplemental insurance plans do not provide coverage for some acute and most nonacute care services, including most long-term care. Custodial long-term care, pharmaceutical drugs, eyeglasses, and routine dental care, for example, are not covered. The elderly generally pay for these services themselves, unless they qualify for Medicaid. Medicaid pays for long-term care when income requirements are met, and other Medicaid benefits vary by state.

Spending Trends Among the Aged—The income of the average household rose rapidly enough during the 1980s to cover additional spending on health care. However, the income of aged individuals increased at a slower rate than that of other households. Consequently, spending for health care absorbed a larger share of the income of households headed by an aged individual in 1988 than in 1982 (see Figure 1-14).

Out-of-pocket expenditures were not distributed evenly among Medicare beneficiaries. These costs represented a larger share of disposable income for the poor elderly than for the nonpoor elderly, 14 percent versus 7 percent.[39] Out-of-pocket expenses were even more significant for poor elderly who had neither insurance to supplement Medicare nor Medicaid. Out-of-pocket health care costs

Figure 1-14. Health Expenditures as a Percent of Disposable Income for Aged Households Compared with All Households

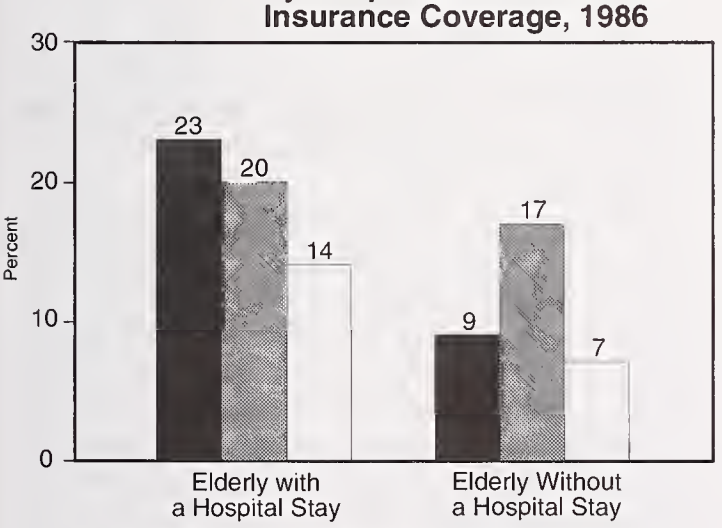


SOURCE: ProPAC graph based on information from *Trends in Health Expenditures by Medicare and the Nation*, Congressional Budget Office, January 1991, 46.

represented 23 percent of the income of low-income elderly who had a hospital stay and Medicare coverage only (see Figure 1-15).[40]

Health care spending can become a major expense for some Medicare beneficiaries. Cost sharing is not related to an individual's income, so health spending can be a significant problem for lower-income beneficiaries. Moreover, many insured beneficiaries do not have protection from catastrophic health care costs.

Figure 1-15. Medical Expenses as a Percent of Income for Low-Income Elderly People, by Hospital Use and Insurance Coverage, 1986



Note: Low-income elderly have incomes of $10,000 or less.

SOURCE: Judith Feder, Marilyn Moon, and William Scanlon, 1987, based on analysis of the 1980 National Medical Care Utilization and Expenditure Survey.

Long-Term Care Coverage—A major expense for the elderly is long-term care. Medicare pays for post-acute care when skilled nursing is needed and rehabilitation is expected, but not for intermittent or maintenance services. Medicare long-term care spending accounts for 1.9 percent of all long-term care costs. Long-term care is generally financed by private funds and Medicaid.

The private market for long-term care insurance is relatively new and small.[41] Long-term care insurance pays for about 1 percent of all long-term care costs. It has grown rapidly in the last few years in terms of both the numbers of companies offering policies and the number of policies sold. Research by HIAA on the long-term care insurance market as of mid-1990 identified 134 firms that sell a total of more than 1.65 million policies. The market is dominated by 15 firms that sell over three-fourths of all long-term care policies. Most policies are sold to individuals by company agents or independent brokers. New products are being sold through groups, employers, and as part of life insurance policies.

Recent market and regulatory pressures have led to changes in long-term care policies. HIAA's survey found that most policies offer nursing home and home health care on the basis of physician certification and generally do not require prior hospitalization. Four or more years of nursing home coverage are typically offered. Most policies were sold to individuals up to age 84, with a 30-day refund, and were guaranteed renewable. Most also offered an inflation protection feature.

Individuals with Employer-Sponsored Insurance—Insured employees pay the employee share of health insurance premiums and out-of-pocket expenses. HIAA reports that employee cost sharing continued to increase in 1990, although moderately. More employees had coinsurance requirements, and average deductibles rose for all types of plans. Some employers have reduced the share of monthly premiums they pay. While there is evidence of some employers reducing the benefits offered to employees to control costs, this was not a consistent pattern across plans.

As health insurance companies have gone from community rating to experience rating, costs to individuals have been redistributed. Currently, many young single employees pay considerably less in premiums than older employees with families. As a result, the principle of using health insurance to share the risk of illness across broad groups of individuals has eroded.

The changes in the nature of health insurance and the market in which it is provided have had other effects as well. Most managed care plans require enrollees to receive care from a restricted panel of providers. Enrollees must also follow specific procedures, such as obtaining referral authorizations, for specialty services.

Additionally, the rising costs of PRHBs may cause some employers to reduce or even drop post-retirement health benefit plans. This trend could leave younger retirees without health insurance coverage until they reach the age of 65 and qualify for Medicare. Further, workers who change employers late in their career and do not accrue 10 years of seniority before they retire may experience a gap in health insurance coverage before they reach the age of 65.

PROBLEMS AND UNMET NEEDS

Despite the high level of health care spending, there are many health care problems and unmet needs in the United States. The number of uninsured people is increasing. Large portions of the middle class are at risk for catastrophic medical costs. In addition, even individuals with insurance may lack access to health care services due to structural problems, such as shortages of physicians in inner-city or rural areas, lack of available nursing home beds, and closures of emergency rooms and hospitals. Financial pressures on some providers threaten the access of insured as well as uninsured individuals.

Many of the difficulties the health care system faces stem from larger social problems. In rural areas, shrinking populations and economic decline are associated with hospital closures. In the cities, persistent poverty and its myriad social problems create emergency room crises. In both areas, health care is likely to be delayed or forgone completely. These problems are outside the direct control of the health care system, but they can be improved by better access to care. For example, prenatal visits can lower the likelihood of a premature birth or maternal health problems, periodic vision and hearing tests and correction can help children function in school, early detection of breast cancer can preclude major surgery, regular monitoring and treatment of diabetes can keep an employee healthy and on the job, and drug addiction treatment can avert a multitude of health and social calamities.

The problems of the health care system discussed in this section include the uninsured, the need for long-term care, and poor health outcomes. The problems of the uninsured population relate to access and the costs of services. The need for and financing of long-term care will become more important in the future as demographic changes continue. International comparisons of health status raise questions about the American health care system and also point to social factors that affect health.

Uninsured Individuals

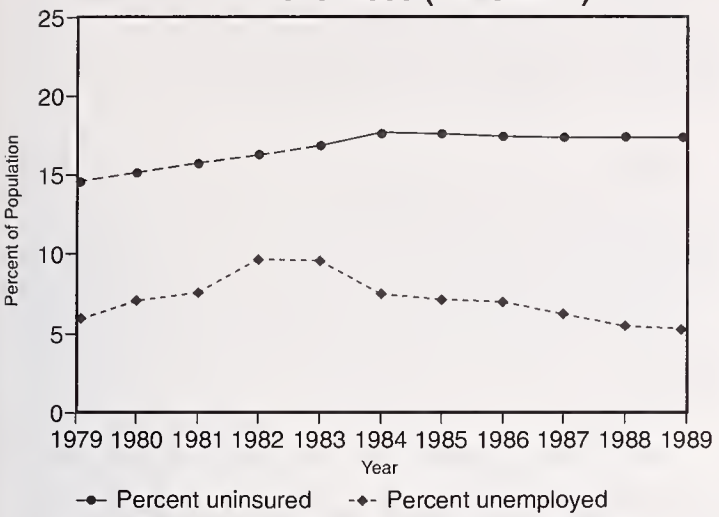
The proportion of people without health insurance rose in the early 1980s along with the unemployment rate. Although the unemployment rate declined after 1983, the uninsured rate remained elevated. Many people went back to work after the recession in the early 1980s, yet a significant number of these workers and their dependents did not regain health insurance (see Figure 1-16).[42]

Estimates of the Uninsured—In 1989, roughly 33 million people under age 65 lacked health insurance. This group constituted about 15 percent of the country's nonaged population.[43]

There have been conflicting estimates of the number of uninsured people. Two sources of this conflict stem from the questions asked on the surveys used to derive the estimates. The first is whether surveys ask respondents if they have health insurance at that particular time or if they have been insured throughout the previous year. The second relates to the health insurance status of household dependents.

Since many people move rapidly in and out of uninsured status, during the course of 1989, for example, more than 33 million people would have lost health insurance for at least a short time. In

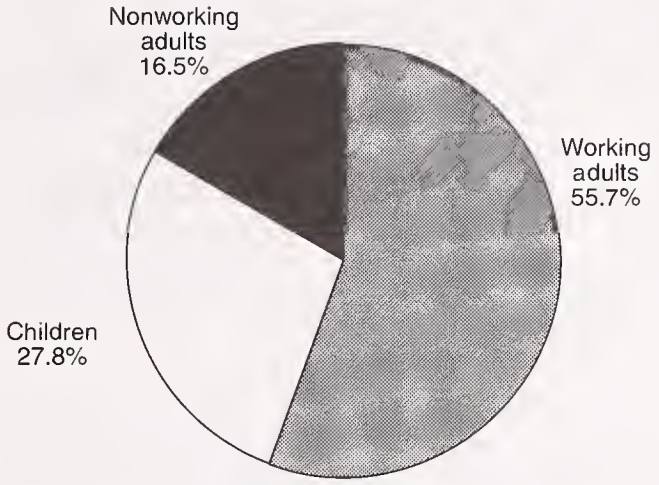
Figure 1-16. Nonaged Uninsured and Unemployed Populations, 1979–1989 (In Percent)



Note: Data on the uninsured are not available in 1980, 1981, and 1982. The 1989 value does not exclude people with health insurance who were detected with new questions asked after 1989.

SOURCE: Uninsured data: Congressional Research Service analysis of Current Population Survey data. Unemployment data: Bureau of Labor Statistics.

Figure 1-17. Uninsured, by Work Status, 1988



Note: Employee Benefit Research Institute analysis of March 1989 Current Population Survey. The analysis examines the nonelderly population, by work status.

SOURCE: Deborah Chollet, *Uninsured in the United States: The Nonelderly Population Without Health Insurance, 1988* (Washington, DC: Employee Benefit Research Institute, 1990) 11.

fact, over a 28-month period from 1985 to 1987, 63 million people were found to lack health insurance for at least one month.[44] Most surveys are cross-sectional and do not provide information about how long respondents were without health insurance. A longitudinal study has shown that about 50 percent of all uninsured spells end within four months, and 15 percent last longer than two years.[45]

New survey questions in the commonly used Current Population Survey (CPS) of the Bureau of the Census have led to refinements in the estimates of the number of uninsured. After a respondent answers "no" to all the questions about different types of health insurance, he or she is assumed to be uninsured. In the 1988 CPS, more questions were asked about dependents' health insurance coverage from sources outside the home, such as Medicaid and absent parents. Before 1988, estimates of the uninsured were about 37 million. After the new questions were added, estimates fell to around 33 million. The decline in the number reflects improvements in the survey questions rather than changes in the actual problem.[46]

Characteristics of the Uninsured—Most of the uninsured work (see Figure 1-17). Of the 24 million uninsured adults in 1989, 18.5 million were working. Of the 9.2 million uninsured children (15 percent of all U.S. children), most were dependents of workers. Only 14 percent of uninsured children were in families in which the head of the household was unemployed.[47]

The uninsured tended to be overrepresented in some employment categories. Overall, 15 percent of all workers were uninsured in 1988, but the following categories of occupations had higher-than-average uninsured rates: agriculture (42 percent), construction (29 percent), nonprofessional services (26 percent), and retail (23 percent).

Despite the fact that many of the uninsured were poor, some had relatively high incomes. About 30 percent of the uninsured had incomes below the poverty level; 12 percent had incomes greater than four times the poverty level.[48]

Uninsured rates also varied considerably by state. In 1988, Michigan and Rhode Island had the lowest rate of uninsured at 8 percent, while Texas and New Mexico had the highest at 26 percent.[49]

Health Care Received by Uninsured Patients—Two recent studies have found a strong relationship between uninsured status and lower-than-average access to care. One study found evidence suggesting that the uninsured were sicker on admission, had fewer tests and shorter lengths of stay for some

conditions, and were more likely than privately insured patients to die in the hospital. The researchers found that the uninsured were less likely than the privately insured to receive high-cost or highly discretionary procedures, such as coronary artery bypass grafts (CABGs) and total knee or hip replacement. The uninsured and the privately insured did not have different rates for less discretionary procedures, such as bronchoscopy and computerized axial tomography (CT) scans for convulsions.[50]

Other researchers found that privately insured patients had higher rates of expensive coronary procedures. They estimated that the insured were 80 percent more likely than the uninsured to receive angiography, 40 percent more likely to have CABGs, and 28 percent more likely to undergo angioplasty.[51]

Previous studies have shown fewer physician contacts and hospital days for uninsured relative to insured patients. From these studies, it can be concluded that many of the uninsured do not receive the same health care services as insured patients.

Long-Term Care

As the population ages, more people are expected to need long-term care and home health care services. Currently, 7.1 million people need help with activities of daily living (such as walking or feeding themselves), and 1.5 million of those are nursing home patients. These numbers have been projected to increase to 13.8 million and 5.3 million, respectively, by 2030.[52]

With an average occupancy of nursing homes at around 95 percent, high utilization may indicate unmet need in many communities. As the population ages, future needs for long-term care in nursing homes will increase. New financing methods are necessary for long-term care because private insurance is expensive, and qualifying for Medicaid may not be an option for many of the elderly. Further, the need for home health care services will also increase because many elderly may prefer to remain at home for as long as possible.

The Nation's Health Status

Although the United States spends the most money in total and per capita on health care, many U.S. health outcomes are worse than those in many other developed countries. U.S. life expectancy is lower than that in Japan, France, Germany, and Canada. The infant mortality rate in the United States is notoriously high: in 1987, the U.S. ranked 18th out of 20 developed countries.[53]

Elderly Americans, on the other hand, have more years of life remaining, on average, than the elderly do elsewhere. A 60-year-old American has a future life expectancy that is about average for developed countries. Yet 85-year-olds live longer here than their counterparts in other developed nations.

The following statistics exemplify sharp differences in the prevalence of disease and mortality rates between minority and white populations, and between the poor and nonpoor. The infant mortality rate for blacks is more than double that for whites (17.9 versus 8.6 per 1,000 live births).[54] The prevalence of cancer averages 10 percent to 20 percent higher among blacks than non-blacks, with even greater differences for cancers such as stomach cancer, prostate cancer, and others.[55] This results in an age-adjusted mortality from cancer that is 40 percent higher for black males than for white males, for example.

Failure to immunize preschool-age children has led to outbreaks of diseases that were once nearly eradicated in the United States. The United States ranks 28th out of 38 countries in the Americas in its rate of measles immunization for one-year-olds. The low immunization level has resulted in a resurgence of measles. In 1989, the reported number of measles cases was 18 times higher than in 1983, when the all-time low was achieved.[56]

Clearly, the health status of some segments of the United States population is disturbingly poor. While these differences may be due in large part to lifestyle and economic status, questions remain about how well the health care system is serving all individuals.

THE CURRENT HEALTH CARE SYSTEM

The United States has the highest per capita health care spending in the world. Spending increases have continued throughout the past decade despite government and private sector cost containment strategies. While having only a modest effect in controlling the rate of growth, cost containment efforts—together with new technological capability

and other changes—have altered the distribution of spending among types of providers. In the last decade, inpatient admissions and length of stay decreased, thereby reducing spending for inpatient services, while outpatient and physician services spending grew.

The share of total spending by payer—government, private payers, and individuals—has been stable in recent years. Although the relative contribution of each payer did not change during the 1980s, the increase in health care spending overall caused these expenses to claim a larger share of each payer's budget.

Health care costs have increased for many reasons. On the provider level, supply was high in many areas, new technologies were incorporated rapidly, existing technologies diffused widely, input costs rose, and more services were delivered during one hospital admission or physician visit. On the financing side, no single payer has had enough market leverage to control costs. The result for individuals with insurance coverage has been access to a wide array of ambulatory and inpatient acute care services, which are frequently technology-intensive.

There are concerns about whether Americans are getting the best value for their spending. Even though insured persons have access to sophisticated and costly care, they also face problems in financing and access to some services. Many insured individuals are vulnerable to financial hardship from health care costs. Even for those with health insurance, long-term care is generally financed, with difficulty for many, through private funds. Additionally, many individuals and their dependents are not insured. They may not be eligible for government programs or able to purchase insurance. Other negative factors include access barriers for the uninsured, unmet long-term care needs, and troubling health problems.

Some portion of national spending on health care services may not be associated with improved health. The uneven distribution of health care resources can lead to delivery of inappropriate services. Malpractice litigation, which is more frequent in the United States than in other countries, adds to the cost of health care both directly and, perhaps, indirectly through the practice of so-called defensive medicine. Further, the pluralistic nature of health care financing and delivery adds extra costs. In the U.S., a greater portion of health care expenditures goes to administrative costs than in any other country.

The Difficulty in Controlling Health Care Costs

The current structure of the health care market is not likely to lead to major reductions in the growth in health care spending. The U.S. health care market is predominantly a private supply and demand system made up of pluralistic groups of suppliers (providers), consumers (individuals), and payers. The system allows wide freedom of choice. It is flexible and able to rapidly develop capacity when funding is available. Yet no single payer can control spending.

Consumers—A unique characteristic of the health care system is that consumers and payers are generally distinct. Continuous increases in health spending have resulted in increases in out-of-pocket spending for consumers. Despite these increases, insurance still acts to protect consumers from the costs of medical care. Further, consumers have high demands for health care, regardless of costs, because the potential benefits—improved health and even life versus death—are high.

Payers—The U.S. has a mix of government and private health care financing. Government financing is available for certain populations: the elderly, the disabled, and some of the poor. Private financing is tied largely to the workplace. As the insurance market diversifies, employers have an increasingly large selection of health insurance plans from which to choose.

The wide array of financing systems does not give any one payer alone the ability to exert sufficient pressure to control costs. Pressures to control costs by Medicare, for example, have led providers to find revenues from other sources. Further, decisions to control costs often result in increased costs to other payers and providers. For example, changes in cost sharing requirements for Medicare services will result in increased costs to the Medicaid program and to private insurers offering medigap plans.

Suppliers—The delivery of health care services is pluralistic as well, depending primarily on

private and, frequently, for-profit providers. Hospitals do not have complete control over costs, and they assert that doctors control the services furnished. One admission results in payments to several providers. When funding is available, providers make medical technologies readily accessible.

Consumers, payers, and providers comprise a health care system that generates costs rapidly and offers high-technology health care to most Americans but excludes others.

Health Care Reform

The continuous increase in health care spending, the large numbers of Americans without health insurance, and unmet needs such as long-term care have led to many calls for major changes in the financing and delivery of health care. Even though the goals of the proposals differ, many common elements can be found in these plans. Generally, the proposals are intended to ensure access to health care to all Americans, regardless of income. How the reform ideas would change the current financing and delivery system vary substantially. They also differ in the extent to which spending would be controlled and reallocated.

Ensuring health care coverage for the uninsured is the focus of most proposals for reform. Many of the strategies would provide private coverage for the uninsured full-time employed, while public coverage of the rest of the uninsured population would be expanded.

The relative roles and responsibilities of Federal and state governments and business in financing the reforms also differ. In some proposals, existing programs such as Medicare and Medicaid would be expanded to include either the uninsured population or the whole population. Mandated employer-sponsored insurance is a common mechanism proposed for covering the employed uninsured. These proposals are designed as "play or pay" systems, where the employer either provides health insurance or pays into a state pool. Suggestions affecting the private insurance market include modifying or eliminating Employee Retirement Income Security Act of 1974 (ERISA) mandated benefits and creating state risk pools for high-risk persons.

Most significant reforms are likely to be associated with higher costs. Depending on the financing mechanism, however, some people are likely to pay more while others would pay less. Market reforms that involve employer mandates may create burdens for small employers. If insurance companies recoup the costs of insuring small employers by raising the premium costs of other groups, large employers and their employees would pay more. Additional health costs may lead businesses to increase prices of their goods and services. Expansions of Medicare and Medicaid would require additional funding from state and Federal governments, thereby affecting taxpayers. On the other hand, many of the reforms would make today's implicit cost shifting explicit. The additional systemwide costs may not be great. However, increasing the availability of insurance will expand access to medical services and may result in somewhat higher expenditures. Therefore, a key element in many of the health care reform proposals is the cost containment approach that accompanies broader access to services.

Some plans would control costs by modifying the current pluralistic financing system into a single or all-payer scheme. The range of benefits that would be provided in these proposals varies: many would develop a minimum level or basic benefits package. Others, however, would expand the current level of benefits to include drug and alcohol treatment, psychiatric care, and long-term care.

Many of the proposals involve features to control the rate of growth in spending for health services. Among the strategies advanced are developing national practice guidelines, standards of care, and outcomes research. Incentives such as encouraging managed care, increasing copayments and deductibles, or eliminating the tax exclusion of employer-provided health insurance have been recommended to reduce individual spending. Other approaches would control costs to the providers by tort reform or attempt to constrain providers' costs through global operating budgets and physician fee schedules.

In general, many of the reform approaches would change current health policy to provide some combination of expanding government programs, creating incentives for insurance companies to provide affordable insurance, removing disincentives for small businesses to insure employees, and providing incentives for individuals to curb unlimited spending. Critical elements of reform proposals are expanded access coupled with new incentives to control spending.

Notes to Chapter 1

1. Estimates of payments for all services include program expenditures, beneficiary out-of-pocket expenditures, employer contributions to the Medicare Hospital Insurance Trust Fund, and Medicare premiums paid by individuals.

2. Information in this section comes from the Health Care Financing Administration's Office of the Actuary.

3. U.S. Department of Commerce, "Health and Medical Services" in *U.S. Industrial Outlook 1991* (Washington, DC: U.S. Government Printing Office, January 1991) 44-1.

4. U.S. Department of Health and Human Services, National Institute on Aging, *Macroeconomic-Demographic Model of Health Care and Consumer Expenditures,* NIH Pub. No. 90-2986 (Bethesda, MD: NIH, January 1990)89.

5. U.S. Congress, Congressional Budget Office, *Trends in Health Expenditures by Medicare and the Nation* (Washington, DC: U.S. Government Printing Office, January 1991)60.

6. American Hospital Association National Hospital Panel Survey.

7. U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States: 1990,* 110th ed. (Washington, DC: U.S. Government Printing Office, 1990)103-4.

8. Terrence Kay, "Volume and Intensity of Medicare Physicians' Services: An Overview," *Health Care Financing Review* 11(4):133-46, Summer 1990.

9. Bureau of the Census, *Statistical Abstract 1990,* 103-4.

10. Peter Kemper and Christopher Murtaugh, "Lifetime Use of Nursing Home Care," *New England Journal of Medicine* 324(9):595-600, February 28, 1991.

11. The Center for Health Economics Research found that the number of physicians was a strong contributor to Medicare physician volume increases. Conversely, Urban Institute researchers found that expanded assignment rates of physicians and increased income of the elderly had increased utilization of Medicare physician services, but that the supply of physicians had a small or negligible effect on Medicare expenditures. For further discussion, see Terrence Kay, "Volume and Intensity."

12. C.R. Neu, Scott C. Harrison, and Joanna Z. Heilbrunn, *Medicare Patients and Postacute Care: Who Goes Where?* (Santa Monica, CA: RAND, November 1989).

13. Congressional Budget Office, *Health Expenditures,* 26.

14. Karen Davis and others, *Health Care Cost Containment* (Baltimore, MD: Johns Hopkins University Press, 1990)81. American Hospital Association, *Medicaid Underpayments and Hospital Care for the Poor: A Fact Sheet* (Chicago, IL: AHA, 1991).

15. A hospital may not restrict the use of its facilities to a small, particular group of physicians, thereby excluding other qualified individuals from its medical staff. A hospital does not have to extend privileges to all physicians who apply, yet the hospital must review the application fairly, provide an appeals process for physicians who are rejected, and state the reasons for rejection. To qualify for Federal income tax exemption under Section 501(c)(3) of the Internal Revenue Code, none of the hospital's net earnings may inure to the benefit of any private shareholder or individual. See Arthur F. Southwick, *The Law of Hospital and Health Care Administration,* 2nd ed. (Ann Arbor, MI: Health Administration Press, 1988)160.

16. U.S. Congress, General Accounting Office, *Nonprofit Hospitals: Better Standards Needed for Tax Exemption,* Report to Congress, GAO/HRD-90-84, Washington, DC, 1990. Robert Pear, "Tax Exemptions of Nonprofit Hospitals Scrutinized," *The New York Times,* December 18, 1990.

17. American Hospital Association, *Hospital Closures, 1980-1989, A Statistical Profile* (Chicago, IL: AHA, 1990).

18. Prospective Payment Assessment Commission, *Hospital Closures: 1985-1988,* Intramural Technical Report No. I-91-01, January 1991.

19. Ibid.

20. The Codman Research Group, Inc., *The Relationship Between Declining Use of Rural Hospitals and Access to Inpatient Services for Medicare Beneficiaries in Rural Areas,* ProPAC Extramural Technical Report No. E-90-01, January 1990.

21. These definitions are from Katherine R. Levit, Mark S. Freeland, and Daniel R. Waldo, "Health Spending and Ability to Pay: Business, Individuals, and Government," *Health Care Financing Review* 10(3):4, Spring 1989.

22. Out-of-pocket expenses include coinsurance, deductibles, the cost of uncovered services, and balance bill amounts (excess over the insurers' reasonable or allowed charge).

23. National Association of State Budget Officers, unpublished memorandum, 1990.

24. U.S. Congress, Congressional Budget Office, "Impact of Legislation on Federal Spending for Medicare," internal staff memorandum, Sandra Christensen, Washington, DC, February 4, 1991.

25. The Deficit Reduction Act of 1984 established a voluntary participating program for physicians and suppliers. Under this program, physicians are encouraged to sign a participation agreement requiring them to accept assignment for all services provided to Medicare beneficiaries. Participating physicians and suppliers cannot charge beneficiaries more than the 20 percent coinsurance (that is, there is no balance billing). The number of participating physicians and suppliers has increased, resulting in a decline in Medicare beneficiaries' out-of-pocket expenses.

26. U.S. Congress, Congressional Budget Office, *An Analysis of the President's Budgetary Proposals for Fiscal Year 1992* (Washington, DC: U.S. Government Printing Office, March 1991)144-50.

27. "Population at or Below the Federal Poverty Level Who Are Covered by Medicaid," *AHA News,* July 30, 1990.

28. Davis, *Cost Containment,* 81.

29. In the spring of 1990, HIAA sponsored a survey of employee benefits managers from a random sample of 3,192 public and private firms. The sample represented about 87 percent of private, state, and local government workers with employer-sponsored health insurance. Self-employed individuals, Federal employees, and individuals who obtain insurance through a union or professional association were excluded. These data were unpublished when made available to ProPAC.

30. Congressional Budget Office, *Health Expenditures,* 11.

31. U.S. Chamber of Commerce Research Center, *Employee Benefits 1990 Edition* (Washington, DC: U.S. Chamber of Commerce, 1990).

32. "FASB Approves New Retirement-Benefit Rules," *Modern Healthcare* 20(51):14, December 24-31, 1990.

33. HIAA unpublished data from 1990 survey.

34. InterStudy, *Managed Care: A Decade in Review* (Excelsior, MN: InterStudy, 1990).

35. Edward Pickens, American Managed Care and Review Association, personal communication, May 7, 1991.

36. *The Fourth Annual A. Foster Higgins Health Care Benefits Survey* (New York, NY: A. Foster Higgins, 1989).

37. Gail Jensen and Jon Gabel, "The Erosion of Purchased Health Insurance," *Inquiry* 25:328-43, Fall 1988.

38. U.S. Congress, Congressional Research Service, "Private Health Insurance: Options for Reform," Report to the Subcommittee on Health, Committee on Ways and Means, House of Representatives, U.S. Congress (Washington, DC: U.S. Government Printing Office, September 20, 1990).

39. Diane Rowland, "Fewer Resources, Greater Burdens: Medical Care Coverage for Low-Income Elderly People," in *A Call for Action,* Supplement to the Final Report, U.S. Congress, The Pepper Commission, U.S. Bipartisan Commission on Comprehensive Health Care (Washington, DC: U.S. Government Printing Office, September 1990)140.

40. Ibid.

41. Health Insurance Association of America, *Long-Term Care Insurance: A Market Update* (Washington, DC: HIAA, January 1991).

42. New questions that were added to the March 1989 and 1990 Current Population Surveys on health insurance coverage of children under 15 were not used to calculate the percentage of the population without health insurance in 1988 and 1989 in Figure 1-16. These questions were omitted so that the trend based on the same survey questions from 1979 to 1989 could be observed.

43. U.S. Congress, Congressional Research Service, unpublished analysis of March 1990 Current Population Survey, March 1991.

44. Charles Nelson and Kathleen Short, *Health Insurance Coverage 1986-88.* Bureau of the Census, Economic Studies, Series P-70, No. 17, March 1990.

45. Katherine Swartz and Timothy D. McBride, "Spells Without Health Insurance: Distributions of Durations and Their Link to Point-in-Time Estimates of the Uninsured," *Inquiry* 27:281-88, Fall 1990.

46. Michael O'Grady, Congressional Research Service, March 1, 1991 and M. Eugene Moyer, Office of the Assistant Secretary for Planning and Evaluation, February 28, 1991, personal communication.

47. Deborah Chollet, *Uninsured in the United States: The Nonelderly Population Without Health Insurance* (Washington, DC: Employee Benefit Research Institute, 1990)1.

48. Ibid.

49. U.S. Congress, General Accounting Office, *Health Insurance Coverage: A Profile of the Uninsured in Selected States,* Report to Congress, GAO/HRD-91-31FS, Washington, DC, February 1991, 12.

50. Jack Hadley, Earl P. Eisenberg, and Judith Feder, "Comparison of Uninsured and Privately Insured Hospital Patients," *Journal of the American Medical Association* 265(3): 374-79, January 16, 1991.

51. Mark B. Wenneker, Joel S. Weissman, and Arnold M. Epstein, "The Association of Payer with Utilization of Cardiac Procedures in Massachusetts," *Journal of the American Medical Association* 264(10):1255-60, September 12, 1990.

52. Pepper Commission, *Call for Action,* 108.

53. Organization for Economic Cooperation and Development, 1989, in Jack Meyer, Sharon Silow-Carroll, and Sean Sullivan, *Critical Choices: Confronting the Cost of American Health Care* (Washington, DC: National Committee for Quality Health Care, 1990)11.

54. Bureau of the Census, *Statistical Abstract 1990,* 77.

55. Lawrence Garfinkel, "Epidemiology of Cancer in Black Americans," *Statistical Bulletin* 72(2):11-17, April-June, 1991.

56. Susan Okie, "Vaccination Record in U.S. Falls Sharply," *The Washington Post,* March 24, 1991.

Chapter 2

Hospital Payments, Expenses, and Financial Condition

Chapter 2

Hospital Payments, Expenses, and Financial Condition

The financial status of hospitals is determined by their expenses and the payments they receive from third-party payers and other sources. Payments and expenses, in turn, are determined by many factors, including the types of services hospitals provide and how efficiently they provide them; the number and types of patients using hospital care; the way state and Federal governments, private insurers, and others pay for hospital services; and other aspects of the environment in which hospitals operate. In this chapter, the financial condition of the hospital industry is examined, focusing on the role of prospective payment and including data on hospitals' overall financial status.

The chapter begins with an analysis of hospital payments and costs under Medicare's prospective payment system. First, the distribution of PPS payments across hospital groups and by payment category is described to provide an overview of the system and its components. Then, changes in payment policy and the Medicare case-mix index (CMI) are examined so that the determinants of increases in per-case payments may be better understood.

This is followed by discussions of trends in PPS operating costs and payments and the resulting PPS operating margins. PPS margins are compared with Medicare inpatient margins, which include Medicare's share of capital costs, the direct costs of graduate medical education programs, and other inpatient services that are currently excluded from PPS. Then the effects of admission volume changes on PPS margins are examined, focusing on rural hospitals. Finally, descriptive data on hospitals that have had consistently high or consistently low PPS margins are presented as part of ProPAC's ongoing analysis of factors that determine hospital performance under PPS.

The second section addresses the overall financial status of the hospital industry. It begins with a discussion of trends in hospital resources, including number of beds and occupancy rates, employment and productivity of labor resources, capital and other non-labor expenses, and capital financing. Trends in hospital expenses and revenues are then described, followed by an analysis of total hospital margins, which cover both inpatient and outpatient care to all patients and also non-patient care activities. This includes a comparison of PPS and total margin trends as well as the factors associated with high and low PPS and total margins. Other indicators of hospitals' overall financial status are also presented.

One of the most important factors in hospital financial performance during the 1980s has been uncompensated care. The third section of this chapter describes the trend and distribution of the costs associated with uncompensated care. Hospital closures have also been discussed frequently as an indicator of industrywide financial performance. The fourth section presents data on the trend in hospital closures and describes hospitals that closed in 1989, including their characteristics compared with similar hospitals that did not close.

The chapter concludes with a brief discussion of the implications of this information for evaluating current policy and formulating plans for future research.

HOSPITAL FINANCIAL CONDITION UNDER PPS

The amount and distribution of PPS payments are major policy issues with important consequences for both hospitals and Medicare beneficiaries. Each year, changes in the Medicare program lead to changes in the amount and distribution of payments. These changes, in combination with the trend in operating costs, determine the financial performance of hospitals under PPS.

PPS Payments to Hospitals

Under PPS, each hospital receives a fixed payment rate per discharge for each type of case. Types of cases are defined by the diagnosis-related groups (DRG) patient classification system. A hospital's basic payment rate for each DRG is based on a national standardized payment amount, which differs according to the hospital's location in a large urban area (a metropolitan statistical area, or MSA, with a population of more than 1 million); an other urban area (an MSA with a population of 1 million or fewer); or a rural area (outside of any MSA).

To account for variation in wage rates across areas, the labor cost portion of the hospital's standardized payment amount (about 70 percent of the total) is adjusted by a wage index for the hospital's area. The wage index measures the relative level of wage rates for hospital workers in each urban or statewide rural area compared with the national average level of hospital wages. The hospital's wage-adjusted standardized amount is then multiplied by the national relative weight for each DRG to obtain the hospital's basic DRG payment rate for that type of case. Each DRG weight measures the relative costliness of treating an average case in the DRG compared with the national average cost of care for all PPS cases.

Given this design, the average basic DRG payment rate a hospital receives reflects its location, the level of local wage rates, and the mix of Medicare cases it admits for inpatient care. This is part of the explanation of why urban hospitals tend to have higher payments per discharge than rural hospitals. Urban hospitals start with higher standardized payment amounts, based on historical and continuing differences in their costs per discharge. Moreover, urban hospitals tend to be located in labor market areas that have higher wage rates, and they are likely to treat a more complex and costly mix of Medicare patients.

Aside from basic DRG payments, a hospital will receive additional payments under PPS if it operates graduate medical education programs (for the training of interns and residents), serves a disproportionate share of low-income patients, or treats patients with unusually long stays or extraordinarily high costs (outlier cases). This is the other source of higher payments for urban hospitals. These hospitals are far more likely than rural hospitals to train interns and residents. Further, urban hospitals are more likely to qualify for additional payments for serving a disproportionate share of low-income patients, and they are also more likely to treat outlier cases.

In fiscal year 1991, hospitals will receive an estimated $53.2 billion in PPS payments. Of that amount, $47.8 billion will be paid from the Medicare Hospital Insurance (Part A) Trust Fund. The remaining $5.4 billion will be paid by beneficiaries through Medicare cost sharing requirements (inpatient deductibles and copayments).[1]

ProPAC estimates for fiscal year 1991 show that PPS payments continue to vary substantially among hospital groups (see Table 2-1). For example, 53 percent of all PPS hospitals are located in urban areas and they account for 79 percent of all PPS discharges. However, these hospitals receive 86 percent of all PPS payments. By contrast, rural hospitals account for 47 percent of PPS hospitals and 21 percent of PPS discharges, but only 14 percent of PPS payments.

When subgroups of urban and rural hospitals are examined, additional patterns emerge. As hospital size increases, the share of PPS payments tends to rise relative to the share of PPS discharges. For instance, 22 percent of all PPS hospitals are rural hospitals with fewer than 50 beds, but they account for only 4 percent of PPS discharges and only 2 percent of PPS payments. Urban hospitals with 500 or more beds represent only 4 percent of all PPS hospitals and 16 percent of PPS discharges, but they account for 21 percent of PPS payments.

Variations in the share of PPS payments reflect a combination of differences in Medicare discharge volume and differences in factors included in PPS that affect each hospital's average PPS payment per discharge. This includes factors identified above, such as the level of local wage rates or the mix of cases treated, which affect the basic DRG payment rates a hospital receives. It also includes factors, such as operating graduate medical education programs or serving a disproportionate share of low-income patients, which trigger additional payments under PPS. Congress included all of these factors

Table 2-1. Distribution of PPS Hospitals and Discharges and Estimated Fiscal Year 1991 PPS Payments, by Hospital Group

Hospital Group	Number of Hospitals	PPS Hospitals	PPS Discharges	PPS Payments			
				Total	IME	DSH	Outlier
All hospitals	5,489	100%	100%	100%	100%	100%	100%
Urban	2,928	53	79	86	98	97	94
Rural	2,561	47	21	14	2	3	6
Large urban	1,467	27	40	48	67	59	57
Other urban	1,461	27	39	38	31	38	37
Rural referral	244	4	7	5	2	1	3
Sole community	374	7	2	1	0	*	*
Other rural	1,943	35	13	7	*	1	2
Major teaching	225	4	9	16	59	34	24
Other teaching	949	17	35	38	41	36	41
Non-teaching	4,315	79	56	47	0	30	34
Disproportionate share:							
Large urban	581	11	16	22	42	59	31
Other urban	637	12	19	20	22	38	21
Rural	340	6	3	2	1	3	1
Non-disproportionate share	3,931	72	62	56	35	0	47
Payment adjustments:							
IME and DSH	610	11	22	30	65	70	41
IME only	564	10	22	24	35	0	25
DSH only	948	17	16	15	0	30	12
No IME or DSH	3,367	61	40	32	0	0	22
Urban <100 beds	715	13	5	4	1	1	3
Urban 100-199 beds	777	14	13	12	4	15	9
Urban 200-299 beds	589	11	18	18	10	19	17
Urban 300-399 beds	383	7	15	17	15	19	18
Urban 400-499 beds	227	4	12	14	19	15	17
Urban 500+ beds	237	4	16	21	49	28	31
Rural <50 beds	1,190	22	4	2	*	*	*
Rural 50-99 beds	790	14	6	3	*	*	1
Rural 100-149 beds	316	6	5	3	*	1	1
Rural 150-199 beds	130	2	3	2	*	1	1
Rural 200+ beds	135	2	5	4	1	1	3
New England	239	4	6	6	10	3	9
Middle Atlantic	568	10	17	19	31	25	30
South Atlantic	766	14	17	16	11	16	15
East North Central	846	15	18	17	21	11	13
East South Central	477	9	8	7	3	8	5
West North Central	778	14	8	7	6	3	4
West South Central	778	14	11	9	5	11	8
Mountain	370	7	4	4	3	2	3
Pacific	667	12	12	14	10	21	12
Voluntary	3,053	56	71	74	77	64	76
Proprietary	1,056	19	14	12	2	11	10
Urban government	401	7	8	10	18	23	12
Rural government	890	16	6	3	*	1	1

Note: PPS payments estimated using PPS rules in effect as of January 1, 1991. Excludes hospitals in Maryland. Columns may not add to 100 due to rounding. IME = Indirect medical education payments. DSH = Disproportionate share payments.

* Less than 0.5 percent.

SOURCE: ProPAC estimates based on ProPAC PPS payment model and fiscal year 1989 MedPAR file data from the Health Care Financing Administration.

in the payment system to ensure that PPS payments would compensate hospitals fairly for appropriate differences in the cost of treating Medicare patients.

Indirect Medical Education and Disproportionate Share Payments—In fiscal year 1991, indirect medical education (IME) and disproportionate share (DSH) payments are expected to account for 9.6 percent of all PPS payments, or about $5.1 billion (see Table 2-2). The IME adjustment is intended to recognize hospitals' indirect costs of operating approved graduate medical education programs. Teaching hospitals are thought to offer a wider range of services and technologies, treat patients who are more severely ill, and generally provide care in a different way than other hospitals. Therefore, they tend to produce a greater volume and a more expensive mix of services per case.

PPS accounts for the indirect costs of teaching by applying a hospital-specific percentage adjustment to each teaching hospital's total DRG payments, which consist of basic DRG payments plus additional payments for outlier cases (see below). The size of a hospital's IME adjustment percentage varies according to the intensity of its graduate medical education activities (which is based on the ratio of interns and residents per bed). In fiscal year 1991, IME payments are expected to account for about 5.5 percent of total PPS payments (about $2.9 billion).

The DSH adjustment is intended to compensate hospitals that treat large proportions of low-income patients. Such hospitals are thought to have higher costs than otherwise similar hospitals for a variety of reasons, including their location and the characteristics of the patients they treat. DSH payments are expected to account for about 4.1 percent of total PPS payments (about $2.2 billion) in fiscal year 1991.[2]

Almost all IME and DSH payments go to hospitals located in urban areas (Table 2-1). Urban hospitals receive 98 percent of IME payments and 97 percent of DSH payments. These payments also account for a larger share of total PPS revenues in urban hospitals than in other hospital groups (Table 2-2). In general, larger hospitals and teaching hospitals also receive more of their PPS revenues from IME and DSH payments than smaller or non-teaching hospitals. Urban hospitals with 500 or more beds, for example, receive 18 percent of their total PPS payments from these adjustments, compared with only 1.7 percent for urban hospitals with fewer than 100 beds.

There is also substantial overlap between the hospitals that receive IME payments and those that receive DSH payments (Table 2-1). Teaching hospitals account for about 70 percent of all DSH payments, and DSH hospitals account for about 65 percent of all IME payments. As a result, IME and DSH payments are a major source of revenue for some hospitals, but of negligible importance for others.

For example, major teaching hospitals (those with a ratio of interns and residents to beds greater than 0.25) receive 21 percent of their PPS payments from the IME adjustment and 8.8 percent of their payments from the DSH adjustment (Table 2-2). Basic DRG payments account for only 61.5 percent of total PPS payments for these hospitals. By contrast, rural hospitals with fewer than 50 beds receive less than 1 percent of all IME and DSH payments. These hospitals depend on basic DRG payments for 98.7 percent of their total PPS revenues.

DSH and IME payments are also distributed unevenly across geographic areas (Table 2-1). The Middle Atlantic and East North Central regions combined receive more than half of all IME payments. DSH payments go predominantly to the Middle Atlantic and Pacific regions (25 percent and 21 percent, respectively).

Outlier Payments—Outlier payments are intended to protect hospitals from the risk of financial losses due to cases with exceptionally long stays or high costs. They are also designed to mitigate the incentive to avoid or inappropriately treat patients who are likely to become unusually costly. In fiscal year 1991, payments for outliers are expected to account for about 5.6 percent of total PPS payments, or almost $3 billion (Table 2-2).

Outlier payments are funded by a 5.6 percent reduction in the DRG rates of urban hospitals and a 2.3 percent reduction in the DRG rates of rural

Table 2-2. Distribution of Estimated Fiscal Year 1991 PPS Payments, by Payment Type and Hospital Group (In Percent)

Hospital Group	PPS Payments			
	Basic DRG	IME	DSH	Outlier
All hospitals	84.7%	5.5%	4.1%	5.6%
Urban	82.9	6.3	4.7	6.2
Rural	96.2	0.7	0.8	2.3
Large urban	80.5	7.7	5.1	6.8
Other urban	85.9	4.5	4.1	5.5
Rural referral	93.5	1.8	1.2	3.6
Sole community	98.6	0.0	0.6	0.8
Other rural	97.6	0.1	0.6	1.7
Major teaching	61.5	20.9	8.8	8.8
Other teaching	83.9	5.9	4.0	6.2
Non-teaching	93.2	0.0	2.7	4.2
Disproportionate share:				
Large urban	70.4	10.6	11.1	7.9
Other urban	80.2	6.0	7.9	6.0
Rural	90.8	1.2	5.2	2.8
Non-disproportionate share	91.7	3.5	0.0	4.8
Payment adjustments:				
IME and DSH	70.5	12.0	9.7	7.8
IME only	85.9	8.2	0.0	5.9
DSH only	86.8	0.0	8.6	4.7
No IME or DSH	96.1	0.0	0.0	3.9
Urban <100 beds	94.8	0.7	1.0	3.4
Urban 100-199 beds	88.8	1.8	5.1	4.3
Urban 200-299 beds	87.2	3.2	4.3	5.4
Urban 300-399 beds	84.1	5.1	4.8	6.0
Urban 400-499 beds	80.7	7.7	4.6	7.0
Urban 500+ beds	73.9	12.6	5.4	8.2
Rural <50 beds	98.7	*	0.5	0.8
Rural 50-99 beds	98.0	0.5	0.4	1.2
Rural 100-149 beds	96.9	0.2	0.9	2.0
Rural 150-199 beds	95.6	0.5	1.1	2.7
Rural 200+ beds	92.7	1.8	1.2	4.2
New England	81.1	9.1	2.1	7.7
Middle Atlantic	77.2	8.7	5.3	8.8
South Atlantic	86.5	3.8	4.1	5.6
East North Central	86.3	6.6	2.7	4.3
East South Central	88.3	2.7	4.9	4.1
West North Central	89.5	5.0	2.0	3.5
West South Central	87.2	2.9	4.9	5.0
Mountain	90.3	3.7	1.7	4.3
Pacific	85.4	3.9	6.0	4.7
Voluntary	84.8	5.8	3.6	5.8
Proprietary	91.0	0.9	3.6	4.5
Urban government	73.3	10.2	9.8	6.7
Rural government	96.5	0.5	1.1	1.9

Note: PPS payments estimated using PPS rules in effect as of January 1, 1991. Excludes hospitals in Maryland. Columns may not add to 100 due to rounding. IME = Indirect medical education payments. DSH = Disproportionate share payments.

* Less than 0.1 percent.

SOURCE: ProPAC estimates based on ProPAC PPS payment model and fiscal year 1989 MedPAR file data from the Health Care Financing Administration.

hospitals. These reduction factors represent a projection by the Health Care Financing Administration of the approximate shares of total DRG payments attributable to outlier payments in urban and rural hospitals, respectively, in fiscal year 1991. Outlier payments, however, are made according to the actual incidence of outlier cases, regardless of where they occur. The net effect of the outlier policy on a given hospital's PPS payments depends on whether its proportion of outlier payments is greater or less than the 5.6 percent (for urban hospitals) or the 2.3 percent (for rural hospitals) the hospital was assessed to finance these payments.

Outlier payments are not evenly distributed across hospital groups because some hospitals are more likely to treat cases with exceptionally long or costly stays. Urban hospitals receive 94 percent of all outlier payments and rural hospitals only 6 percent (Table 2-1). Similarly, while teaching hospitals account for 44 percent of PPS discharges, they receive 65 percent of outlier payments. Hospitals in the Middle Atlantic region, which have about 17 percent of all PPS discharges, account for 30 percent of all outlier payments.

As with other elements of PPS payment, the uneven distribution of outlier payments is not necessarily an indication that the outlier policy is inequitable. Certain groups of hospitals treat a more diverse mix of patients and thus face a greater risk that some of their patients will require an extraordinary amount of resources. Therefore, it is appropriate that some hospital groups receive a greater share of outlier payments than others.

The Effects of Payment Policy Changes

Before the beginning of prospective payment in fiscal year 1984, hospitals were paid on the basis of the costs they actually incurred in providing services to Medicare beneficiaries. Under this method, payments to hospitals were unevenly distributed because of differences in hospital characteristics and costliness. Teaching hospitals, for instance, have historically received a disproportionate share of payments because they are generally large hospitals with a high volume of Medicare discharges and high costs per case.

By paying hospitals on the basis of a fixed payment rate for each DRG, PPS has removed the direct connection between the costs of the individual hospital and its Medicare payments. This connection has been replaced with adjustments designed to recognize the impact of certain factors that affect a hospital's cost but are beyond its control, such as local market conditions and the mix of patients it treats.

As noted later in this chapter, the distribution of Medicare payments among hospitals changed substantially in the first year of PPS. In addition, changes in hospital behavior and other factors resulted in marked changes in the level and distribution of Medicare operating costs per case. The combination of these changes resulted immediately in large disparities in financial performance among hospitals under PPS.

Congress responded by enacting a series of policy changes that were intended to mitigate the perceived inequities in payments under the initial design of PPS. For example, the IME adjustment was reduced and the DSH adjustment added beginning in fiscal year 1986. Similarly, Congress has mandated separate update factors for rural hospitals, hospitals located in large urban areas, and those located in other urban areas each year beginning in fiscal year 1988. These changes in policy have affected the level and distribution of PPS payments among hospitals, generally as Congress intended.

Other changes in the distribution of payments have occurred when specific elements of the payment system have been updated to reflect new data. Elements of PPS that are subject to periodic updating include the area wage index, the DRG classification system and weights, and the outlier thresholds.

With Medicare payments no longer tied to each hospital's actual costs, hospitals are more vulnerable to the effects of policy decisions. The following discussion focuses on the impact of payment policy changes adopted after the first year of PPS. The impact on payments is measured relative to the policy in effect during the first PPS year. However, under the transition policy adopted in implementing PPS, payments in the first through fourth years were based on a changing blend of hospital-specific, regional, and national rates. To isolate the impact of policy changes from the effects of the transition, the estimates presented below reflect

the impact of policy changes on the national payment rates only. Moreover, the policies in effect at the end of each fiscal year (including any policies adopted during the year) are treated as if they were in effect throughout the year. While this approach does not measure the actual changes in payments that occurred, it gives a better picture of the ultimate impact of each policy change once it is fully implemented.

It is also important to note that changes in payments are attributable both to policy decisions and to other factors that are not directly affected by these decisions. Other significant factors include changes in the distribution of Medicare discharges among hospital groups and rapid but uneven increases in the complexity and costliness of the mix of Medicare patients admitted for care (case mix).

While the volume of Medicare discharges from PPS hospitals has declined only a small amount since 1983, this volume has declined substantially for both small urban and small rural hospitals. At the same time, important changes in medical technology permitted a major shift in the site of care toward much greater use of outpatient services. Moreover, the kinds of Medicare cases affected by the shift from inpatient to outpatient care have tended to be cases that generally would have required relatively short inpatient stays and incurred relatively low costs, if admitted for care. Consequently, the Medicare case-mix index, which measures the expected costliness of a hospital's Medicare inpatient cases, has increased rapidly since PPS began. However, the rate of increase of the CMI among hospital groups has been uneven (see below).

Changes in CMI directly affect PPS payments to hospitals. The effects of CMI change on payments can be isolated from the effects of changes in PPS policy by examining the rate of increase in average PPS payments per case while holding case mix constant. These estimates are different from those presented in previous ProPAC reports because the Commission's payment models and comparison methods have been refined during the past year.

Changes in Fiscal Years 1990 and 1991—The effects of policy changes implemented in fiscal years 1990 and 1991 on per-case payments have been large relative to policy effects in earlier years (see Table 2-3).[3] Most of these effects are attributable to changes enacted in the Omnibus Budget Reconciliation Acts of 1989 and 1990. Major provisions included different updates for rural and urban hospitals, expansion of the disproportionate share adjustment, and changes in the basis of payment for sole community hospitals (SCHs). These are geographically isolated hospitals that are the sole available source of care for residents of their community. In addition, the update of the hospital wage index for fiscal year 1991 had a substantial effect on per-case payments for some hospitals.

The estimates of increases in per-case payments for fiscal years 1990 and 1991 are strongly influenced by the differential updates granted to rural and urban hospitals in those years. Effective January 1, 1990, the PPS update factor for rural hospitals was 9.72 percent, with an additional 4.5 percent effective on January 1, 1991. The comparable updates for hospitals in large urban areas were 5.62 percent and 3.2 percent; for hospitals located in other urban areas, the update factors were 4.97 percent and 3.2 percent.[4]

The estimates also reflect significant changes in payment adjustments and payment methods for specific categories of hospitals. Effective April 1, 1990, the formula for calculating the disproportionate share adjustment was changed, increasing the size of the adjustment for most disproportionate share hospitals and providing an adjustment for many hospitals that had not been eligible previously. In addition, sole community hospitals and small rural Medicare-dependent hospitals (rural hospitals with fewer than 50 beds in which Medicare's share of days or discharges exceeds 60 percent) were allowed to choose between payment rates computed using their own 1982 costs, their 1987 costs, or the PPS Federal rate. Increases in per-case payments for some areas also reflect the impact of the update of the wage index that became effective on January 1, 1991. For example, changes in the wage index were an important factor in explaining why per-case payments increased 8.6 percent in New England and 5.7 percent in the South Atlantic region, compared with a 3.4 percent increase for all hospitals.

The OBRA 1989 and OBRA 1990 changes have resulted in large increases in the per-case payment

Table 2-3. Effects of PPS Update Factors and Other Payment Policy Changes on Per-Case PPS Payment Rate, by Hospital Group (In Percent)

Hospital Group	Fiscal Year 1984-1987	1988	1989	1990	1991	Total PPS Policy Effect	Cumulative Increase in Case-Mix Index*	Total Case Mix and Policy Effect
All hospitals	5.5%	2.4%	2.1%	6.4%	3.4%	24.7%	22.7%	53.1%
Urban	4.2	1.7	1.7	5.9	3.3	21.0	23.4	49.3
Rural	7.6	4.6	3.7	9.0	4.2	30.7	16.4	52.2
Large urban	4.4	1.7	1.8	6.1	3.5	23.3	22.6	51.2
Other urban	4.3	1.8	1.7	5.7	3.0	17.7	24.1	46.0
Rural referral	3.5	1.5	1.5	6.1	3.8	17.2	21.1	42.0
Sole community	8.6	3.5	4.3	17.1	5.2	41.4	13.6	60.5
Other rural	8.5	6.4	4.8	9.3	4.2	34.8	13.2	52.6
Major teaching	-4.5	1.5	2.1	7.5	3.9	15.8	23.5	42.9
Other teaching	4.1	1.8	1.7	5.6	2.9	19.7	23.4	47.7
Non-teaching	7.8	2.9	2.4	6.6	3.7	26.1	20.7	52.2
Disproportionate share:								
Large urban	5.8	2.0	1.8	8.5	3.6	30.6	21.7	59.0
Other urban	5.6	1.8	1.6	7.2	3.1	21.0	24.4	50.5
Rural	6.7	4.5	3.1	10.9	4.8	31.5	16.9	53.8
Non-disproportionate share	5.2	2.5	2.5	5.2	3.4	21.5	22.0	48.3
Payment adjustments:								
IME and DSH	3.1	1.6	1.6	7.8	3.1	24.6	23.9	54.3
IME only	1.6	1.6	2.1	4.2	3.1	15.3	23.6	42.5
DSH only	9.9	2.4	1.8	8.5	4.1	30.7	21.1	58.2
No IME or DSH	6.8	3.1	2.7	5.8	3.5	23.9	20.5	49.4
Urban <100 beds	5.2	0.6	1.8	4.8	2.8	15.2	17.7	35.6
Urban 100-199 beds	6.8	1.6	1.8	6.2	3.8	22.2	19.6	46.1
Urban 200-299 beds	5.6	1.7	1.9	5.6	3.1	20.0	22.6	47.2
Urban 300-399 beds	4.7	2.0	1.5	6.4	3.5	21.9	23.4	50.5
Urban 400-499 beds	3.4	1.9	1.6	5.8	3.0	19.6	24.4	48.8
Urban 500+ beds	0.0	1.6	1.6	5.9	3.1	20.6	25.4	51.3
Rural <50 beds	9.6	5.7	4.1	12.3	3.5	36.1	9.1	48.6
Rural 50-99 beds	8.3	5.6	4.0	10.6	4.2	34.1	13.0	51.5
Rural 100-149 beds	7.6	4.6	4.1	8.4	4.5	30.9	17.8	54.2
Rural 150-199 beds	5.3	3.7	2.8	7.0	4.1	23.6	16.9	44.4
Rural 200+ beds	3.5	2.6	2.8	6.3	4.4	21.7	21.3	47.7
New England	6.4	4.1	2.1	5.7	8.6	35.1	15.9	56.6
Middle Atlantic	-1.0	2.5	1.7	5.7	3.9	27.4	21.1	54.2
South Atlantic	4.6	2.5	1.6	6.5	5.7	21.6	25.0	52.0
East North Central	3.7	1.9	2.4	5.1	1.8	14.9	21.3	39.4
East South Central	4.2	2.5	1.9	7.0	3.3	19.1	22.5	45.9
West North Central	10.9	1.9	2.8	6.6	0.0	22.8	22.9	50.9
West South Central	6.0	1.6	2.7	8.6	2.2	21.8	26.4	53.9
Mountain	3.6	2.1	2.9	7.0	3.9	19.9	21.3	45.4
Pacific	9.2	1.7	3.2	7.0	2.7	25.0	23.2	54.1
Voluntary	4.8	2.3	2.1	5.8	3.3	23.0	22.1	50.1
Proprietary	6.3	2.5	1.3	6.9	4.1	23.7	26.8	56.9
Urban government	4.7	1.6	2.0	8.6	3.2	26.0	23.1	55.0
Rural government	8.3	4.7	4.1	9.5	4.3	31.8	14.5	51.0

Note: Figures are not estimates of actual changes in fiscal year PPS hospital payments. They are meant to isolate the effects of changes in PPS rules on PPS payment rates, holding all other factors constant. Payments for each year are estimated based on the PPS rules in effect on the last day of the fiscal year. The effect of change in case mix is reflected only in the last two columns. Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with fiscal year 1987; and includes hospitals in New Jersey beginning with fiscal year 1989. IME = Indirect medical education payments. DSH = Disproportionate share payments.

* The effect of change in case mix for 1990 and 1991 is estimated from the average annual effect for 1985 through 1989.

SOURCE: ProPAC estimates based on ProPAC PPS payment model and fiscal year 1989 MedPAR file data from the Health Care Financing Administration.

rates for rural hospitals, particularly sole community hospitals and rural disproportionate share hospitals. Small rural hospitals (those with fewer than 100 beds) and rural government hospitals also appear to have benefited substantially from these policy changes.

Cumulative Effects of Payment Policy—The PPS update factor and other payment policy decisions made between the first and eighth years of PPS have increased per-case PPS payments by a cumulative 24.7 percent. However, rural hospitals have benefited from these decisions substantially more than urban hospitals, with a cumulative increase that is almost 10 percentage points higher (30.7 percent compared with 21.0 percent). Small rural hospitals have been helped much more than large hospitals in any location, while urban hospitals with fewer than 100 beds have fared worse than most other groups.

Disproportionate share hospitals located in large urban areas also have experienced substantial increases in payments under the policy changes implemented since PPS began. However, the IME adjustment was reduced in fiscal year 1986, primarily in reaction to the effects of the large IME adjustment received by teaching hospitals in the first year of PPS. Consequently, policy changes adopted since the first year of PPS have provided a relatively low cumulative increase in payments for major teaching hospitals, despite the large overlap between teaching activity and service to low-income patients.

Historically, much of the policy debate each year focuses on the size of the PPS update factor, although other payment policy decisions attract attention as well. However, the rate of increase in the CMI is about equally important in determining the overall increase in per-case PPS payments. In addition, the distribution of case-mix change is often quite different from the pattern of payment policy effects. For example, rural hospitals had a relatively large increase in payments per case due to policy effects, but their increase in payments due to CMI change was well below average. Consequently, the cumulative effect of policy and CMI change is only three percentage points higher for rural than for urban hospitals. The trend and pattern of CMI changes are described in more detail below.

Case-Mix Index Change—The CMI is the average DRG weight for all cases paid under PPS. It measures the relative costliness of the patients treated in each hospital or group of hospitals. However, an increase in the CMI may result from either changes in patient resource use or refinement of medical record documentation and coding practices. Changes in patient resource use may be due to treating patients who are more severely ill or to providing more complex services. These reflect real changes in the costliness of treatment. Refinement of medical record documentation and coding practices, on the other hand, may result in higher payment but does not reflect changes in treatment costs.

The CMI has increased each year since the implementation of PPS (see Table 2-4). The CMI for all hospitals was 1.048 in 1981 (pre-PPS) and increased to 1.319 by fiscal year 1989. Between fiscal years 1984 and 1989, the CMI increased at an average annual rate of 3.2 percent. From 1988 to 1989, the increase was 2.8 percent.

The largest single-year increase in the CMI occurred in the first year of PPS. This increase coincided with the introduction of financial incentives to improve coding completeness and accuracy, and with large shifts of patients to outpatient settings. Another major increase occurred in fiscal year 1988, when changes in the structure of several DRGs provided hospitals with new incentives for more complete coding.

Historically, the CMI for urban hospitals has been higher than for rural hospitals. In addition, the CMI for urban hospitals has been increasing more rapidly. As a result, the difference between the CMIs of the two groups has been widening over time. In 1989, the CMIs for urban and rural hospitals were 1.365 and 1.160, respectively, a difference of 18 percent.

Within the urban and rural hospital groups, both the CMI and the rate of growth in the CMI increase with hospital size. Similarly, major teaching hospitals have had both higher and slightly more rapidly increasing CMIs than other teaching hospitals, and all teaching hospitals as a group have higher and faster-growing CMIs than nonteaching hospitals.

Table 2-4. Changes in the Medicare Case-Mix Index Under PPS, by Hospital Group, 1981-1989

Hospital Group	Case-Mix Index				Average Annual Percent Change		
	1981*	1984	1988	1989	1981*-1984	1984-1989	1988-1989
All hospitals	1.048	1.129	1.283	1.319	2.7%	3.2%	2.8%
Urban	1.075	1.164	1.326	1.365	2.9	3.2	2.9
Rural	0.979	1.033	1.138	1.160	2.0	2.3	1.9
Large urban	1.081	1.170	1.327	1.366	2.9	3.1	2.9
Other urban	1.068	1.158	1.325	1.364	3.0	3.3	2.9
Rural referral	1.036	1.099	1.242	1.271	2.2	3.0	2.3
Sole community	0.971	1.021	1.106	1.125	1.8	2.0	1.7
Other rural	0.958	1.008	1.091	1.108	1.9	1.9	1.6
Major teaching	1.164	1.274	1.453	1.495	3.3	3.3	2.9
Other teaching	1.090	1.191	1.355	1.397	3.3	3.2	3.1
Non-teaching	1.011	1.079	1.213	1.245	2.4	2.9	2.6
Disproportionate share:							
Large urban	1.099	1.187	1.337	1.378	2.8	3.0	3.1
Other urban	1.065	1.164	1.337	1.374	3.3	3.4	2.8
Rural	0.966	1.022	1.126	1.151	2.1	2.4	2.2
Non-disproportionate share	1.039	1.115	1.263	1.297	2.6	3.1	2.7
Payment adjustments:							
IME and DSH	1.106	1.213	1.385	1.427	3.4	3.3	3.0
IME only	1.100	1.199	1.368	1.408	3.2	3.3	2.9
DSH only	1.014	1.088	1.224	1.258	2.6	2.9	2.8
No IME or DSH	1.010	1.076	1.209	1.240	2.3	2.9	2.6
Urban < 100 beds	0.989	1.046	1.165	1.184	2.1	2.5	1.6
Urban 100-199 beds	1.032	1.105	1.231	1.266	2.5	2.8	2.8
Urban 200-299 beds	1.060	1.140	1.296	1.331	2.7	3.1	2.7
Urban 300-399 beds	1.084	1.172	1.336	1.375	2.9	3.2	2.9
Urban 400-499 beds	1.108	1.205	1.384	1.422	3.1	3.4	2.7
Urban 500+ beds	1.133	1.264	1.449	1.501	4.1	3.5	3.6
Rural < 50 beds	0.943	0.983	1.038	1.051	1.5	1.3	1.3
Rural 50-99 beds	0.960	1.015	1.096	1.114	2.0	1.9	1.6
Rural 100-149 beds	0.989	1.046	1.164	1.185	2.1	2.5	1.8
Rural 150-199 beds	1.003	1.055	1.168	1.188	1.9	2.4	1.7
Rural 200+ beds	1.035	1.099	1.242	1.273	2.2	3.0	2.5
New England	1.090	1.167	1.285	1.306	2.5	2.3	1.6
Middle Atlantic	1.094	1.133	1.277	1.310	1.3	2.9	2.6
South Atlantic	1.044	1.128	1.297	1.336	2.9	3.4	3.0
East North Central	1.064	1.127	1.272	1.305	2.1	3.0	2.6
East South Central	1.014	1.074	1.211	1.253	2.1	3.1	3.5
West North Central	1.019	1.126	1.288	1.317	3.7	3.2	2.3
West South Central	0.987	1.102	1.278	1.316	4.1	3.6	3.0
Mountain	1.060	1.154	1.299	1.336	3.1	3.0	2.8
Pacific	1.098	1.181	1.345	1.384	2.7	3.2	2.9
Voluntary	1.064	1.150	1.302	1.338	2.9	3.1	2.8
Proprietary	1.004	1.074	1.242	1.286	2.5	3.7	3.5
Urban government	1.069	1.155	1.318	1.352	2.9	3.2	2.6
Rural government	0.963	1.018	1.110	1.129	2.0	2.1	1.7

Note: Case-mix indexes presented in this table are case-weighted averages for each hospital group. They are based on DRG assignments made by the GROUPER software in use at the time of discharge for each Medicare case. Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with fiscal year 1986; and includes hospitals in New Jersey beginning with fiscal year 1989. IME = Indirect medical education payments. DSH = Disproportionate share payments.

* Data for 1981 correspond to the calendar year. All other years shown are Federal fiscal years.

SOURCE: ProPAC analysis of MedPAR file data from the Health Care Financing Administration.

These differences in the rate of CMI change raise an important issue related to PPS payment policy. As shown above, the distribution of payments may be substantially affected by the pattern of CMI changes. However, a significant portion of CMI change may be due to changes in coding practices, rather than real changes in patient resource requirements. Information is not available about the relative importance of these factors across hospital groups. Nevertheless, to the extent that different groups of hospitals exhibit different coding behavior, the distribution of PPS payments may be significantly affected by factors unrelated to patient resource requirements. Furthermore, the effect of this change may be contrary to that desired by policy makers.

Trends in PPS Costs and Payments

One of the major objectives of PPS is to encourage hospitals to contain the cost of providing care to Medicare patients. The pattern of growth in operating costs and payments over the first six years of PPS provides some information about how effectively this objective has been met.

Changes in Total PPS Operating Costs—In the first year of PPS, total allowable Medicare operating costs were almost 5 percent less than they had been in the previous year (see Table 2-5).[5] This decrease was principally due to sharp declines in Medicare inpatient admissions and average length of stay. Growth in PPS operating costs was held below 6 percent for the next two years, primarily because of continued reductions in Medicare admissions, but has since accelerated. In the fifth and sixth years of PPS, total PPS operating costs grew by 11.8 percent and 10.8 percent, respectively.

Changes in Total PPS Payments—Total PPS payments followed a different trend than cost increases. In the first year of PPS, payments grew by 11 percent. By the third year, total payments decreased as admissions continued to decline and Congress and the Administration adjusted the payment system in response to the high Medicare surpluses of the first two years. While much of the reduced growth in total payments during this period was due to loss of inpatient volume, added outpatient volume produced a revenue increase that partially offset this loss. Since the fourth year of PPS, payments have grown each year, although three to five percentage points slower than the increase in costs. In the sixth year, total PPS payments increased by 6.8 percent—four percentage points less than costs.

Growth in PPS revenue was substantially faster for urban hospitals than for rural hospitals during the first two years of prospective payment. During the fifth year, however, payments increased more rapidly for rural hospitals. Along with experiencing faster than average growth in costs each year, other urban hospitals have also experienced faster

Table 2-5. Changes in PPS Operating Costs, Payments, and Discharges, First Six Years of PPS (In Percent)

Year	PPS Operating Costs	PPS Payments	PPS Discharges	PPS Operating Costs Per Discharge	PPS Payments Per Discharge	Market Basket	Update Factor
TEFRA to PPS 1	-4.6%	11.0%	-6.3%	1.9%	18.5%	4.9%	4.7%
PPS 1 to PPS 2	4.2	4.0	-5.7	10.4	10.3	3.9	4.5
PPS 2 to PPS 3	5.8	-0.5	-3.6	9.7	3.2	3.1	0.5
PPS 3 to PPS 4	7.4	3.5	-1.4	9.0	5.0	3.6	1.2
PPS 4 to PPS 5	11.8	6.7	1.2	10.6	5.4	4.8	1.5
PPS 5 to PPS 6	10.8	6.8	1.1	9.7	5.7	5.4	3.3

Note: Data on costs, payments, and discharges for aach PPS year (TEFRA, PPS 1, etc.) corraspond to aach hospital's cost raporting period beginning in that year. For instance, the TEFRA yaar includas data from aach hospital's cost raporting period beginning during the yaar in which TEFRA was in effact (Fadaral fiscal yaar 1983). Data on the market basket and the updata factor are from tha corrasponding Federal fiscal year (1984 for PPS 1, atc.). Excludes hospitals in Maryland and New Jarsay; includes hospitals in Massachusetts and New York, beginning with PPS 3. Data are based on cohorts of hospitals with cost raports available in each of two successive years.

SOURCE: ProPAC analysis of Madicara Cost Raport data from the Health Care Financing Administration.

than average payment growth (0.7 to 2.8 percentage points higher annually). Except for the first year of PPS, rural referral centers and large rural hospitals (those with more than 200 beds) experienced a similar trend. Growth in PPS payments to sole community hospitals and urban hospitals with fewer than 100 beds was substantially slower than the average for all hospitals in every year. Total PPS payments actually declined in each of the first three years of PPS for rural hospitals with fewer than 50 beds, due primarily to large declines in admission rates over this period.

Changes in PPS Discharges—Medicare discharges from PPS hospitals decreased dramatically during the first few years of PPS. The drop in discharges was much greater for rural than urban hospitals, and the declines were largest for the smallest rural and smallest urban hospitals. Discharges also declined less in major teaching hospitals than in other hospitals. By the fifth year of PPS, however, discharges had begun to increase. During the sixth year, total PPS discharges rose by 1.1 percent, still substantially less than the annual increase in Medicare enrollment.

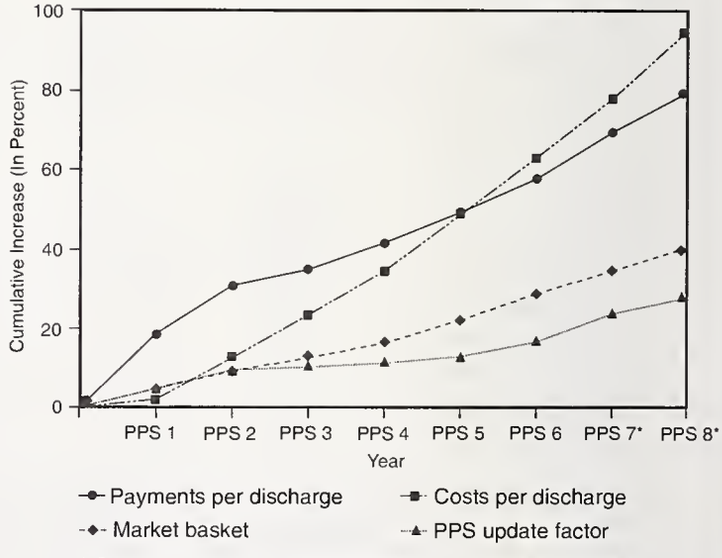
Changes in Operating Costs Per Discharge—Except for the first year of PPS, operating costs per discharge have grown at a fairly constant rate, between 9.0 percent and 10.6 percent per year. In the first year, operating costs per discharge grew by only 1.9 percent. The increase in the sixth year was 9.7 percent. The cumulative growth in operating costs per discharge under PPS is projected to be almost 95 percent by the eighth year (see Figure 2-1). This increase has far exceeded that in the PPS market basket (the index of the cost of inputs used to produce care for Medicare patients), although it slowed somewhat relative to the market basket in the sixth year. The increase in operating costs per discharge has been more than twice the 41 percent increase in the market basket through the eighth year of PPS.

The pattern of change in operating costs per discharge varies slightly across the different hospital groups (see Table 2-6). Sole community hospitals consistently had lower than average cost per case increases in each of the first six years of PPS. Through the first four years, major teaching hospitals also had slower growth in costs per case. In the sixth year, rural hospitals with 200 or more beds and rural referral centers had the fastest growth in per-case costs, over 11 percent, and rural hospitals with fewer than 50 beds had the slowest growth, about 5 percent.

Changes in Payments Per Discharge—Payments per discharge increased by 18.5 percent in the first year of PPS and 10.3 percent in the second year. In the third year, they grew by only 3.2 percent, but they have since accelerated. In the fourth through sixth years, the increase in payments per discharge has been between 5.0 percent and 5.7 percent. PPS payments per discharge have grown much more rapidly than the update factor in every year. This is primarily due to CMI increases, as discussed above. In the first eight years of PPS, the update factor has increased payment rates by a cumulative 28 percent. Total PPS payments per discharge, however, have risen an estimated 80 percent.

There has been considerably more variation across hospital groups in PPS payments per case than in costs per case (see Table 2-7). During the first year of PPS, urban hospitals had a substantially higher per-case payment increase than rural hospitals, 19.8 percent compared with 11.6 percent. More recently, however, rural hospitals have

Figure 2-1. Cumulative Increases in PPS Costs and Payments Per Discharge, First Eight Years of PPS (In Percent)



* Costs and payments are estimated for PPS 7 and PPS 8

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration and hospital cost data from the American Hospital Association National Hospital Panel Survey.

Table 2-6. Changes in PPS Operating Costs Per Discharge, by Hospital Group, First Six Years of PPS (In Percent)

Hospital Group	TEFRA to PPS 1	PPS 1 to PPS 2	PPS 2 to PPS 3	PPS 3 to PPS 4	PPS 4 to PPS 5	PPS 5 to PPS 6	Annual Average Percent Change
All hospitals	1.9%	10.4%	9.7%	9.0%	10.6%	9.7%	8.5%
Urban	1.7	10.4	9.4	8.9	10.6	9.8	8.4
Rural	1.7	8.9	9.8	8.6	10.1	9.3	8.0
Large urban	0.5	10.1	9.5	8.1	10.5	9.3	7.9
Other urban	3.1	10.9	9.5	10.1	10.9	10.4	9.1
Rural referral	1.5	9.4	10.5	10.2	10.7	11.0	8.8
Sole community	0.6	8.5	8.1	7.2	9.7	8.0	7.0
Other rural	1.8	8.3	9.5	7.4	9.5	8.3	7.4
Major teaching	1.3	9.7	7.8	7.9	11.6	9.8	8.0
Other teaching	1.4	10.3	9.5	8.9	9.9	9.3	8.2
Non-teaching	2.0	10.2	9.9	9.2	10.9	9.9	8.6
Disproportionate share:							
Large urban	-1.1	10.2	9.0	7.7	10.2	9.9	7.6
Other urban	3.5	10.5	9.5	10.5	10.8	10.7	9.2
Rural	0.1	8.0	10.5	8.7	11.2	9.8	8.0
Non-disproportionate share	2.4	10.5	9.9	9.0	10.6	9.4	8.6
Payment adjustments:							
IME and DSH	0.7	10.4	9.0	8.7	10.1	9.7	8.0
IME only	2.2	10.4	9.3	8.5	10.5	9.1	8.3
DSH only	1.2	9.9	9.5	9.3	11.2	11.1	8.6
No IME or DSH	2.3	10.3	10.0	9.2	10.7	9.5	8.6
Urban <100 beds	0.6	10.3	10.3	9.0	10.1	9.6	8.3
Urban 100-199 beds	0.4	10.4	9.6	9.0	10.1	10.3	8.2
Urban 200-299 beds	1.4	9.9	9.4	8.7	9.8	9.9	8.1
Urban 300-399 beds	1.9	10.6	8.7	8.6	10.9	9.3	8.3
Urban 400-499 beds	2.4	9.3	8.3	10.2	10.8	9.1	8.3
Urban 500+ beds	2.4	11.3	9.7	8.3	11.4	10.1	8.8
Rural <50 beds	2.2	8.9	9.2	7.2	9.2	5.1	6.9
Rural 50-99 beds	1.2	8.6	8.9	6.9	9.4	7.9	7.1
Rural 100-149 beds	0.7	8.4	8.9	7.8	9.6	10.5	7.6
Rural 150-199 beds	2.2	9.1	10.0	9.9	9.4	10.5	8.5
Rural 200+ beds	1.4	8.3	11.4	10.5	11.3	11.4	9.0
Voluntary	1.8	10.0	9.3	8.6	10.6	9.3	8.2
Proprietary	1.0	10.1	10.8	10.3	11.6	11.3	9.1
Urban government	2.3	12.4	9.7	9.3	9.9	11.1	9.1
Rural government	2.0	10.4	10.1	8.6	9.3	8.6	8.1

Note: Data for each PPS year (TEFRA, PPS 1, etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the TEFRA year includes data from each hospital's cost report beginning during the year in which TEFRA was in effect (Federal fiscal year 1983). Excludes hospitals in Maryland and New Jersey; includes hospitals in Massachusetts and New York, beginning with PPS 3. Data are based on cohorts of hospitals with cost reports available in each of two successive years. IME = Indirect medical education payments. DSH = Disproportionate share payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Table 2-7. Changes in PPS Payments Per Discharge, by Hospital Group, First Six Years of PPS (In Percent)

Hospital Group	TEFRA to PPS 1	PPS 1 to PPS 2	PPS 2 to PPS 3	PPS 3 to PPS 4	PPS 4 to PPS 5	PPS 5 to PPS 6	Annual Average Percent Change
All hospitals	18.5%	10.3%	3.2%	5.0%	5.4%	5.7%	7.9%
Urban	19.8	10.1	3.0	4.8	5.1	5.8	8.0
Rural	11.6	9.2	3.2	5.7	7.1	5.7	7.0
Large urban	19.1	8.8	2.9	3.6	4.6	5.8	7.3
Other urban	20.7	11.7	3.2	6.4	5.9	5.8	8.8
Rural referral	12.2	14.2	4.3	6.4	6.9	6.3	8.3
Sole community	10.0	6.6	2.2	4.9	5.6	4.1	5.5
Other rural	11.4	6.6	2.2	5.0	7.3	5.7	6.3
Major teaching	24.6	12.9	0.9	4.8	5.8	5.1	8.7
Other teaching	20.2	10.0	3.0	4.4	4.7	6.1	7.9
Non-teaching	16.0	9.3	3.5	5.4	6.0	5.6	7.6
Disproportionate share:							
Large urban	17.9	9.0	3.8	4.5	5.2	6.0	7.6
Other urban	21.3	11.9	3.9	7.4	6.2	6.0	9.3
Rural	12.1	9.2	3.5	6.9	8.0	8.1	7.9
Non-disproportionate share	18.2	10.1	2.8	4.3	5.1	5.6	7.6
Payment adjustments:							
IME and DSH	20.4	11.1	3.5	5.6	5.4	5.7	8.5
IME only	21.9	10.7	1.8	3.3	4.3	6.1	7.8
DSH only	16.4	9.1	4.2	6.5	6.6	6.6	8.2
No IME or DSH	15.8	9.4	3.2	5.0	5.8	5.2	7.3
Urban <100 beds	16.4	10.0	2.6	4.9	4.3	5.0	7.1
Urban 100-199 beds	17.0	8.7	3.7	5.3	5.1	5.9	7.5
Urban 200-299 beds	18.5	8.7	3.1	4.4	4.6	5.8	7.4
Urban 300-399 beds	19.4	9.6	3.1	4.4	5.5	5.3	7.7
Urban 400-499 beds	20.4	11.2	2.5	5.4	5.6	5.0	8.2
Urban 500+ beds	24.4	11.8	1.9	4.3	5.1	6.6	8.8
Rural <50 beds	11.1	6.9	2.0	6.1	8.2	3.4	6.2
Rural 50-99 beds	11.5	7.4	1.9	4.1	6.9	5.6	6.2
Rural 100-149 beds	10.7	7.2	3.0	5.8	6.5	7.4	6.7
Rural 150-199 beds	11.1	10.6	4.0	6.5	6.7	4.3	7.2
Rural 200+ beds	12.6	13.4	3.9	6.0	6.7	6.6	8.1
Voluntary	18.8	10.0	2.9	4.6	5.2	5.6	7.7
Proprietary	17.7	8.7	4.0	5.8	5.4	6.3	7.9
Urban government	20.1	12.4	3.8	6.6	6.5	6.3	9.2
Rural government	11.1	9.3	2.8	5.8	8.2	5.8	7.1

Note: Data for each PPS year (TEFRA, PPS 1, etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the TEFRA year includes data from each hospital's cost report beginning during the year in which TEFRA was in effect (Federal fiscal year 1983). Excludes hospitals in Maryland and New Jersey; includes hospitals in Massachusetts and New York, beginning with PPS 3. Data are based on cohorts of hospitals with cost reports available in each of two successive years. IME = Indirect medical education payments. DSH = Disproportionate share payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

had larger increases in payments than urban hospitals. This reflects payment policy changes as discussed above.

PPS Operating Margins

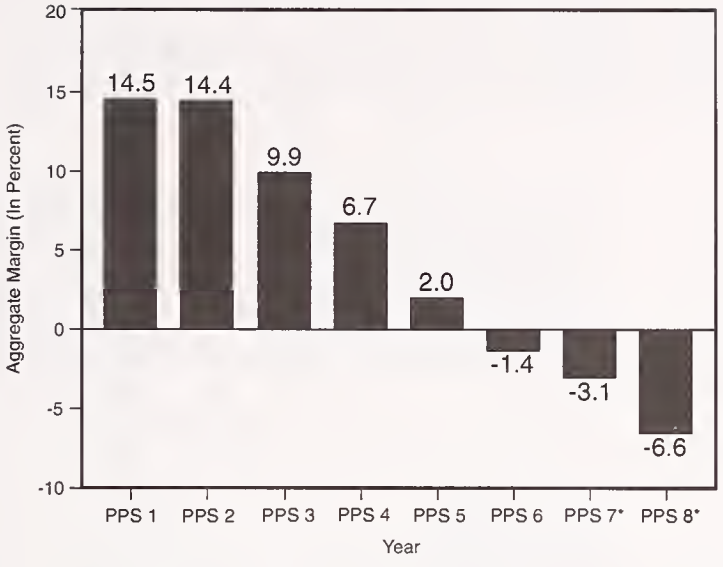
The trend and distribution of PPS operating margins is presented in this section. The PPS margin compares PPS payments to Medicare inpatient operating costs. It provides a measure of the relationship between the costs of Medicare covered services and how much is paid for them under prospective payment. Similar data on total margins will be presented later in the chapter, along with a discussion of how the trends in the two margins compare.

Trends in PPS Margins—Aggregate PPS operating margins have fallen sharply from the high levels observed during the first two years of PPS (see Table 2-8). These margins exceeded 14 percent in each of the first two years, reflecting the large increases in PPS payments per discharge in those years and the industry's initial success in restraining growth in operating costs per discharge. The high margins observed initially, however, had fallen to about 2 percent by the fifth year of PPS. In the sixth year, the aggregate PPS margin fell below zero for the first time, to -1.4 percent. For the current (eighth) year, ProPAC estimates an aggregate PPS margin of -6.6 percent (see Figure 2-2).

The difference in PPS margins between urban and rural hospitals has recently begun to narrow. First-year PPS margins were 8.4 percent for rural hospitals and 15.8 percent for urban hospitals, a 7.4 percentage point spread. By the sixth year, however, the PPS margin for rural hospitals was -5.1 percent compared with -0.7 percent for urban hospitals, a difference of 4.4 percentage points.

Major teaching hospitals continue to have the highest PPS margin. However, it declined to 9.3 percent in the fifth year of PPS and fell further, to 6.7 percent, in the sixth year. Despite the large decline in the PPS margin for major teaching hospitals, it continues to be more than 10 percentage points higher than the non-teaching hospital margin. The PPS margin for non-teaching hospitals fell to -1.2 percent in the fifth year of PPS, and declined further to -5.1 percent in the sixth year.

Figure 2-2. Aggregate PPS Operating Margin, First Eight Years of PPS (In Percent)



* PPS margin estimated for PPS 7 and PPS 8.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

For urban hospitals, there is a strong relationship between hospital size and PPS margin. While urban hospitals with fewer than 100 beds had an aggregate PPS margin of -6.3 percent in the sixth year of PPS, those with 500 or more beds had a PPS margin of 2.7 percent.

The effect of the IME and DSH adjustments on PPS margins can readily be seen by comparing hospitals with and without these adjustments. Hospitals receiving both an IME and a DSH adjustment had an aggregate PPS margin of 4.5 percent in the sixth year of PPS. A considerable proportion of major teaching hospitals also receive DSH payments, as described above. Aggregate PPS margins for hospitals receiving just one of these adjustments were -0.7 percent for IME only and -1.6 percent for DSH only, while hospitals that received neither adjustment had an aggregate margin of -6.6 percent. Payment adjustments and payment policy changes have clearly advantaged certain hospital groups relative to others.

Distribution of PPS Margins—The range of PPS margins increased substantially in the first five years of PPS (see Table 2-9). During the first two years, when PPS margins were generally high, there was less concern about hospitals with low

margins. There were few hospitals for which PPS payments did not cover operating costs. As the average PPS margin falls and more hospitals experience financial difficulty under PPS, the distribution of PPS margins becomes increasingly important. By the fifth year of PPS, half of all hospitals had negative PPS margins. This compares with only 18.3 percent in the first year. Moreover, the gap between hospitals that were doing best under PPS and those that were doing worst had become wider. By the sixth year, 57 percent of all hospitals had negative PPS margins.

Table 2-8. PPS Operating Margins, by Hospital Group, First Six Years of PPS

Hospital Group	PPS 1	PPS 2	PPS 3	PPS 4	PPS 5	PPS 6
All hospitals	14.5%	14.4%	9.9%	6.7%	2.0%	-1.4%
Urban	15.8	15.4	11.0	7.7	2.6	-0.7
Rural	8.4	8.9	3.3	0.8	-1.7	-5.1
Large urban	16.4	15.4	11.2	7.7	2.0	-0.6
Other urban	15.0	15.4	10.7	7.8	3.3	-0.9
Rural referral	9.7	13.5	8.1	4.7	1.4	-2.9
Sole community	8.5	6.7	1.8	-0.4	-4.2	-8.2
Other rural	7.7	6.5	0.4	-1.7	-3.5	-6.0
Major teaching	19.4	21.1	16.6	14.2	9.3	6.7
Other teaching	16.3	16.0	11.7	8.2	3.4	0.6
Non-teaching	12.1	11.4	6.4	3.2	-1.2	-5.1
Disproportionate share:						
Large urban	17.0	15.9	13.1	10.8	6.6	3.8
Other urban	15.2	15.9	12.1	9.6	5.6	1.4
Rural	9.9	10.7	4.5	3.2	0.6	-1.2
Non-disproportionate share	13.8	13.6	8.2	4.3	-0.9	-4.1
Payment adjustments:						
IME and DSH	17.1	17.4	14.1	11.7	7.7	4.5
IME only	16.9	17.2	11.8	7.6	1.7	-0.7
DSH only	13.1	12.3	8.4	6.2	2.1	-1.6
No IME or DSH	11.8	11.1	5.6	1.9	-2.6	-6.6
Urban <100 beds	13.2	12.7	6.4	3.1	-2.3	-6.3
Urban 100-199 beds	14.4	12.8	8.1	5.3	0.5	-3.5
Urban 200-299 beds	15.2	14.3	9.7	6.1	1.0	-2.1
Urban 300-399 beds	15.5	14.6	10.9	7.3	2.4	-1.5
Urban 400-499 beds	15.9	17.3	13.4	9.6	5.0	1.5
Urban 500+ beds	18.3	18.5	13.6	10.8	5.3	2.7
Rural <50 beds	6.4	5.2	-1.0	-1.4	-1.9	-3.5
Rural 50-99 beds	8.7	7.7	1.9	-0.5	-2.9	-5.2
Rural 100-149 beds	8.6	7.2	2.5	0.2	-2.7	-5.4
Rural 150-199 beds	8.5	9.8	4.6	2.1	0.3	-5.8
Rural 200+ beds	9.6	13.9	7.4	3.4	-0.8	-5.2
Voluntary	15.0	15.0	10.6	7.4	2.5	-0.7
Proprietary	14.1	12.7	7.9	4.3	-1.5	-5.8
Urban government	15.1	14.8	10.2	8.1	4.9	1.1
Rural government	7.0	6.3	0.6	-1.9	-3.0	-5.3

Note: Data for each PPS year (PPS 1, PPS 2, etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the PPS 1 year includes data from each hospital's cost report beginning during the first year of PPS (Federal fiscal year 1984). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York, beginning with PPS 3; and includes hospitals in New Jersey, beginning with PPS 6. IME = Indirect medical education payments. DSH = Disproportionate share payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Table 2-9. Distribution of PPS Operating Margins and Percentage of Hospitals with Negative Margins, First Six Years of PPS

Percentile	PPS 1	PPS 2	PPS 3	PPS 4	PPS 5	PPS 6
10th	-6.7%	-8.4%	-14.7%	-18.2%	-25.7%	-29.3%
25th	3.4	2.2	-3.3	-6.6	-10.9	-15.0
Median	11.2	10.7	5.7	3.5	0.0	-3.2
75th	17.7	17.9	13.4	11.7	9.7	7.1
90th	23.1	24.0	19.5	18.7	18.0	15.6
Percentage of hospitals with negative PPS operating margins	18.3	20.1	32.8	40.4	50.1	57.2

Note: Data for each PPS year (PPS 1, PPS 2, etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the PPS 1 year includes data from each hospital's cost report beginning during the first year of PPS (Federal fiscal year 1984). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York, beginning with PPS 3; and includes hospitals in New Jersey, beginning with PPS 6.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

The distribution of PPS margins within hospital groups was also very wide (see Table 2-10). While 25 percent of urban hospitals had sixth-year PPS margins below -13.5 percent, 25 percent had margins above 7.4 percent. Similarly, 25 percent of rural hospitals had margins below -16.9 percent, but another 25 percent were above 6.9 percent.

The distribution of PPS margins among major teaching hospitals was consistently high relative to other hospital groups; 25 percent had sixth-year PPS margins exceeding 15.8 percent. Similarly, the distribution of margins for sole community hospitals was consistently low relative to other hospitals.

Medicare Inpatient Margins—The Medicare inpatient margin provides a broader measure than the PPS margin of how well hospitals are compensated for inpatient hospital services provided to Medicare beneficiaries. This measure compares total Medicare inpatient payments with total Medicare-allowable inpatient costs, including capital, direct medical education, and other inpatient costs currently excluded from PPS.

These other costs were originally reimbursed on a reasonable cost basis. But since fiscal year 1987, Medicare has paid only a specified portion of allowable capital costs. Currently, Medicare compensates hospitals for 85 percent of allowable capital costs. Payments for direct medical education expenses are also no longer paid on a reasonable cost basis.[6] Changes in Medicare's payments for graduate medical education programs are not yet reflected in the Medicare Cost Reports.

Medicare capital payments accounted for 9.6 percent of total Medicare inpatient payments in the sixth year of PPS (see Table 2-11). This proportion was considerably higher for non-teaching hospitals than for major teaching hospitals. Overall, direct medical education payments accounted for 2.8 percent of inpatient hospital payments in the sixth year. The direct medical education payment percentage is highest among urban hospitals, especially large hospitals and those in large urban areas.

The general pattern of Medicare inpatient margins is similar to the pattern of PPS margins. However, because the additional items included in the inpatient margin have been paid based on cost and more recently at less than cost, these margins are lower than the PPS margins. The difference in the two margins will almost always be larger for hospitals with a higher proportion of cost-based payment. As with PPS margins, Medicare inpatient margins have fallen from a very high level of 12.9 percent in the first year of PPS to -2.5 percent in the sixth year, approximately one percentage point lower than the PPS margin. The distribution across different types of hospitals is also similar to the distribution of PPS margins, with major teaching hospitals having the highest sixth-year Medicare inpatient margin at 4.5 percent and sole community hospitals having the lowest at -7.7 percent.

Rural Hospital Volume Changes and Financial Performance

From the first through fifth year of PPS, total hospital admissions fell 12.5 percent, on average. The volume of admissions declined more in rural hospitals than in urban hospitals (see Figure 2-3). Admissions decreased 21.2 percent in rural hospitals from the first through the fifth years, compared with a decline of 4.0 percent for urban hospitals.[7]

Table 2-10. Distribution of PPS Operating Margins, by Hospital Group, Sixth Year of PPS (In Percent)

Hospital Group	Percentile				
	10th	25th	Median	75th	90th
All hospitals	-29.3%	-15.0%	-3.2%	7.1%	15.6%
Urban	-25.8	-13.5	-2.7	7.4	15.5
Rural	-33.3	-16.9	-3.9	6.9	15.7
Large urban	-27.1	-15.0	-3.5	7.2	15.7
Other urban	-24.1	-12.1	-2.0	7.6	15.1
Rural referral	-20.5	-11.2	-3.0	5.9	13.6
Sole community	-42.3	-21.8	-7.9	4.1	11.3
Other rural	-33.5	-17.0	-3.0	7.9	16.5
Major teaching	-13.5	-4.1	7.4	15.8	23.7
Other teaching	-20.5	-9.6	-1.2	7.1	14.8
Non-teaching	-31.9	-17.0	-4.2	6.6	15.2
Disproportionate share:					
Large urban	-24.6	-11.6	0.8	11.7	18.5
Other urban	-21.1	-10.4	0.5	9.1	16.8
Rural	-27.9	-12.4	0.9	11.1	20.6
Non-disproportionate share	-31.3	-16.9	-4.5	5.6	14.4
Payment adjustments:					
IME and DSH	-17.6	-7.1	3.2	11.9	19.4
IME only	-22.1	-10.8	-2.6	4.5	13.9
DSH only	-28.1	-13.1	-0.8	9.6	17.9
No IME or DSH	-33.0	-17.9	-4.7	5.8	14.5
Urban <100 beds	-39.6	-19.9	-3.6	9.2	17.7
Urban 100-199 beds	-29.0	-15.8	-4.1	6.6	15.6
Urban 200-299 beds	-22.7	-12.2	-3.2	6.3	13.9
Urban 300-399 beds	-20.4	-10.7	-2.2	5.6	13.5
Urban 400-499 beds	-16.7	-10.9	0.2	8.3	16.2
Urban 500+ beds	-14.5	-6.5	1.2	10.8	17.0
Rural <50 beds	-42.2	-19.4	-2.1	9.5	19.5
Rural 50-99 beds	-29.3	-16.2	-4.3	5.8	14.3
Rural 100-149 beds	-31.1	-16.5	-4.6	5.4	11.8
Rural 150-199 beds	-29.7	-12.6	-4.4	3.4	11.1
Rural 200+ beds	-22.5	-14.1	-5.2	1.8	9.9
Voluntary	-23.1	-12.8	-3.2	5.5	13.0
Proprietary	-31.5	-17.6	-6.7	4.6	12.9
Urban government	-27.9	-11.3	-0.5	10.1	16.8
Rural government	-36.5	-18.1	-5.3	5.2	13.9

Note: Excludes hospitals in Maryland. IME = Indirect medical education payments. DSH = Disproportionate share payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

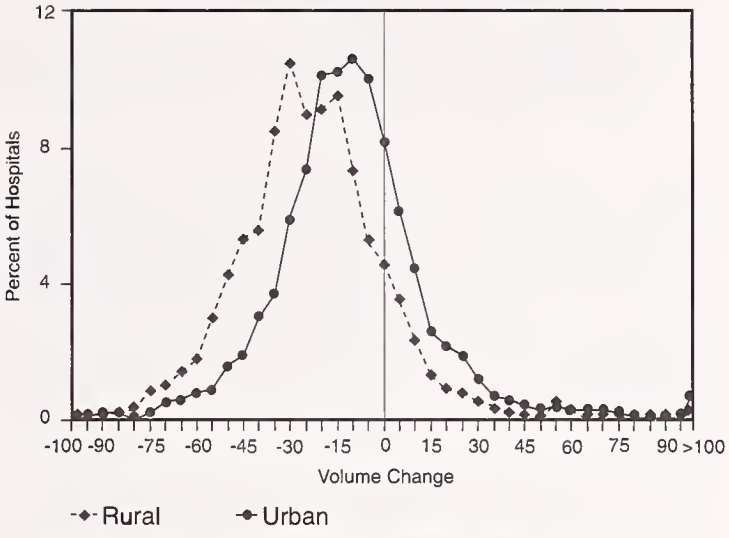
Table 2-11. Medicare Pass-Through Payments as a Percentage of Total Medicare Inpatient Hospital Payments in the Sixth Year of PPS, by Hospital Group

Hospital Group	Capital Payments	Direct Medical Education Payments	Combined Total
All hospitals	9.6%	2.8%	12.4%
Urban	9.6	3.2	12.8
Rural	9.8	0.5	10.3
Large urban	9.6	4.0	13.6
Other urban	9.6	2.3	11.9
Rural referral	9.7	1.0	10.7
Sole community	10.3	0.2	10.5
Other rural	9.9	0.1	10.0
Major teaching	7.6	9.8	17.4
Other teaching	9.0	3.7	12.7
Non-teaching	10.7	0.2	10.9
Disproportionate share:			
Large urban	9.2	5.8	15.0
Other urban	9.5	2.8	12.2
Rural	10.0	0.9	10.9
Non-disproportionate share	9.8	1.9	11.7
Payment adjustments:			
IME and DSH	8.6	6.1	14.7
IME only	8.7	4.3	12.9
DSH only	10.9	0.2	11.1
No IME or DSH	10.6	0.2	10.8
Urban <100 beds	10.4	0.4	10.8
Urban 100-199 beds	11.4	0.8	12.3
Urban 200-299 beds	10.2	1.9	12.1
Urban 300-399 beds	9.4	2.9	12.3
Urban 400-499 beds	8.6	3.8	12.4
Urban 500+ beds	8.5	6.4	14.9
Rural <50 beds	8.5	0.0	8.5
Rural 50-99 beds	9.9	0.2	10.1
Rural 100-149 beds	10.6	0.2	10.8
Rural 150-199 beds	10.8	0.4	11.1
Rural 200+ beds	9.4	1.2	10.6
Voluntary	9.3	3.2	12.5
Proprietary	12.8	0.4	13.2
Urban government	8.0	4.2	12.2
Rural government	9.0	0.4	9.4

Note: Total pass-through payments also include organ acquisition payments and other Medicare inpatient hospital payments not paid under PPS. Only capital and direct medical education payments are included in this table. Excludes hospitals in Maryland. IME = Indirect medical education payments. DSH = Disproportionate share payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Figure 2-3. Cumulative Volume Changes in Rural and Urban Hospitals, First to Fifth Year of PPS (In Percent)



SOURCE: ProPAC analysis of Medicare Cost Report data.

Small hospitals may be more financially vulnerable to volume changes than other hospitals for at least two reasons. Being small, they are less able to cover losses from extraordinarily expensive cases since they lack the volume of cases necessary to make up for these losses. Secondly, many small rural hospitals have low occupancy. Low occupancy hospitals may be more financially threatened by further volume declines than higher occupancy hospitals, since fixed costs (those that the hospital cannot immediately reduce in response to declines in volume) represent a larger proportion of their total costs. ProPAC-sponsored research found that fixed costs represent 65 percent of total costs in rural hospitals with occupancy rates of less than 40 percent, compared with 34 percent in rural hospitals with occupancy rates over 60 percent.[8]

ProPAC examined the total patient volume experiences of several groups of rural hospitals over time. Total admissions rather than Medicare admissions were used for the analysis because decisions that determine hospital behavior are more likely to be based on total volume than on Medicare volume alone. Hospitals with the following volume patterns in three out of the four year-to-year periods were studied from the first through fifth years of PPS:

- Consistent large volume declines (losses of 10 percent or more each year),
- Consistent small volume declines (0-10 percent losses each year),
- Volume increases, and
- Volume swings (such as a 5 percent gain followed by a 10 percent drop and another 5 percent gain).

The relationship between these patterns of hospital volume changes and the hospitals' financial performance is discussed below. Costs, payments, and margins for hospitals in each of the above groups are presented in Table 2-12, and the findings are summarized below.

Consistent Large Volume Declines—Hospitals in this group fared poorly; large volume declines were difficult for any type of hospital to absorb, including those that started in better financial condition. Small hospitals, however, fared worse than larger hospitals.

PPS margins for this group were lower than total margins in the fifth year, and deteriorating PPS margins were associated with rising costs per case. PPS payments per case were consistently only slightly below the national average, while PPS costs per case started lower than average in the first year of PPS and ended higher than average in the fifth year. Hospitals that were expected to have a higher percentage of fixed costs, such as those with fewer than 25 beds and sole community hospitals, did not have faster increases in costs per case compared with other hospital groups. This may be due in part to smaller case-mix increases in these hospitals as more patients with complex conditions left their communities to seek care in larger hospitals.

Consistent Small Volume Declines—This group had volume, cost, and revenue experiences similar to the average rural hospital. The hospitals in this group appear to have adjusted to steady volume declines. PPS margins were negative in the fifth year, but this appeared to have little effect on total margins, which were fairly stable and close to the industry average.

Volume Increases—Hospitals with increasing volume had slightly higher than average per-case

Table 2-12. Total Hospital Inpatient Volume Patterns and Financial Performance, First Through Fifth Years of PPS

Hospital Group	PPS Costs Per Case*	PPS Revenues Per Case*	PPS Margin*	Total Margin*
Large declines				
PPS 1	$1,759	$1,816	6.0%	2.7%
PPS 3	2,230	1,986	-5.3	-1.3
PPS 5	2,783	2,299	-10.3	-1.4
Small declines				
PPS 1	2,096	2,273	9.4	5.8
PPS 3	2,435	2,526	4.5	4.0
PPS 5	2,932	2,826	-2.0	4.1
Increases				
PPS 1	2,034	2,211	9.5	4.7
PPS 3	2,259	2,388	6.5	4.8
PPS 5	2,651	2,650	5.0	5.0
Swings				
PPS 1	1,827	1,971	7.9	3.2
PPS 3	2,086	2,097	2.2	1.7
PPS 5	2,502	2,446	1.0	2.9

* PPS costs and revenues per case are reported as means, while margins are reported as medians.

Note: Data for each PPS year correspond to each hospital's cost reporting period beginning in that year. For instance, PPS 1 includes data from each hospital's cost report beginning during Federal fiscal year 1984.

SOURCE: ProPAC analysis of Medicare Cost Report data.

payment increases and lower per-case costs, resulting in above average PPS margins in the fifth year. The decline in the PPS margin between the first and fifth years was only 4.5 percentage points, much smaller than the drop for all rural hospitals over the same period. These hospitals began the period with total margins that were lower than average and ended with total margins that were higher than average.

Volume Swings—PPS and total margins were slightly lower than average for hospitals with wide volume swings. The financial consequences of volume swings did not appear as serious as those associated with steep volume declines, however. The cumulative volume change was similar to that of hospitals with consistent small volume declines, yet both their PPS and total margins were somewhat lower. Hospital groups with the largest increases in costs per case had the lowest PPS margins.

These results suggest a relationship between the pattern of total inpatient admission volume and financial performance. Persistent large volume declines were associated with low PPS and total margins across all rural hospital groups. Volume increases were associated with positive margins. Volume swings were generally not related to poor financial performance, although margins were slightly lower than for the volume decline groups.

Hospitals with Consistently High or Low PPS Margins

After more than seven years, there is still much to learn about what determines financial success or failure under PPS. The data on PPS margins show that, even as the performance of PPS hospitals declines in aggregate, some hospitals continue to perform well. As the aggregate PPS margin falls, there is increasing interest in determining why some hospitals do well under PPS and others do not. To the extent that these reasons are beyond the hospital's control, changes in the payment system may be indicated. Insofar as they are related to the hospital's behavior, it may be possible to use such behavior as a model for other hospitals in similar situations.

The following section presents some evidence on hospitals with consistently high PPS margins ("winners"), those with consistently low PPS margins ("losers"), and all other hospitals. Consistent performance is defined as a PPS margin in the top or bottom quartile of the distribution of PPS margins in each of the third, fourth, and fifth years of PPS. Winning and losing are defined separately for urban and rural hospitals because their environment, hospital characteristics, and payment levels differ.

Although the aggregate PPS margin is declining, the performance of PPS winners remained almost unchanged in the third, fourth, and fifth years of PPS (see Tables 2-13 and 2-14). By contrast, the performance of PPS losers deteriorated each year. This was true for both rural and urban hospitals. Although rural hospitals, on average, have lower PPS margins than urban hospitals, the PPS margins of rural winners are similar to those of urban winners. Thus, it appears that certain rural hospitals are able to match the financial performance of the best performing urban hospitals. However, the factors related to winning for rural and urban hospitals differ, as discussed below.

Urban Hospitals—Teaching status is an important factor in winning under PPS for urban hospitals. Major teaching hospitals are almost three times as likely to be PPS winners as their proportion in the industry would indicate. This is not surprising because teaching hospitals receive a large payment adjustment under PPS. A teaching program, however, is clearly not the only criterion for successful performance under PPS in urban areas, since the number of PPS winners is evenly divided between teaching and non-teaching hospitals.

Large hospitals make up 20 percent of urban PPS winners—nearly twice their proportion among all hospitals. Large hospitals may have certain economies of scale and, thus, their costs per unit of service may be lower than other hospitals. However, 23 percent of the PPS winners in urban areas have fewer than 100 beds. Therefore, size alone does not appear to guarantee or prohibit winning under PPS.

Higher case mix was associated with winning among teaching hospitals, but the case-mix index appeared to have no effect on other hospitals. It is commonly believed that successful hospitals under PPS have increased their CMIs, in part through improved DRG coding. But the CMIs of winning hospitals generally did not appear to have increased at a faster rate than other hospitals.

Major teaching hospitals that are winners had higher wage index values than other major teaching hospitals. All other winners had wage index values more similar to those of the non-winners. Two other factors related to the wage index also appear to be associated with performance under PPS. The first is the relationship of the average wage in the hospital's county to the average wage in the metropolitan statistical area. There is some evidence that hospitals in the same MSA face different prevailing wage rates. Hospitals located in a county with an average wage below the MSA average fared better under PPS, presumably because they faced lower wages than they were compensated for. Other

Table 2-13. Characteristics of Urban Hospitals with Consistently Low and Consistently High PPS Margins, Third Through Fifth Years of PPS

	Low	Middle	High
Number of hospitals	279	1,837	297
Percent of all hospitals	11.6%	76.1%	12.3%
Average PPS margin:			
PPS 3	-9.4%	8.6%	22.0%
PPS 4	-15.9	5.2	20.9
PPS 5	-24.1	0.3	19.2
Distribution by teaching status:			
Major teaching	1.8%	5.1%	16.6%
Other teaching	21.2	31.3	33.0
Non-teaching	77.1	63.6	50.5
Distribution by size:			
< 100 beds	28.0%	20.7%	23.6%
100-249 beds	44.4	44.2	30.6
250-404 beds	20.4	23.8	25.3
405+ beds	7.2	11.3	20.5
Average case mix index by teaching status:			
Major teaching	1.24	1.42	1.44
Other teaching	1.23	1.31	1.36
Non-teaching	1.20	1.22	1.20
Average wage index by teaching status:			
Major teaching	1.05	1.09	1.12
Other teaching	1.05	1.01	1.04
Non-teaching	1.00	1.00	1.01
Average occupancy by teaching status:			
Major teaching	55.9%	77.0%	78.3%
Other teaching	58.7	66.8	69.2
Non-teaching	54.3	58.4	53.9
Other characteristics (average):			
Percent Medicaid patients	6.4%	8.9%	13.2%
Percent disproportionate share	33.0%	39.7%	59.3%
Productivity*	10.5	11.5	12.4
Change in length of stay (PPS 1--PPS 5)	-1.3%	-2.0%	-4.5%

Note: Data for each PPS year correspond to each hospital's cost reporting period beginning in that year. For instance, PPS 3 includes data from each hospital's cost report beginning during Federal fiscal year 1986.

* Defined as case-mix adjusted admissions per skill-mix adjusted FTE.

SOURCE: ProPAC analysis of Medicare Cost Report data and American Hospital Association Annual Survey.

studies have indicated that these hospitals tend to be located in the outlying portions of their MSAs. Second, in 1988, hospitals were paid on the basis of a blend of their 1982 and 1984 wages. Hospitals in areas where labor costs grew rapidly between 1984 and 1988 were found to have lower PPS margins than other hospitals. The lag in updating the wage index appears to have disadvantaged these hospitals.

Urban winners were more likely to offer exempt services, such as rehabilitation, drug or alcohol treatment, and separate skilled nursing units. They were also likelier to offer highly specialized services, such as burn care, neonatal intensive care, and transplant services. In addition, more of them offered alternative services like home care, and more had separate intermediate or domiciliary care units and hospice facilities. Finally, they were more likely to offer high-technology services such as open-heart surgery, cardiac catheterization laboratories, and intensive care units. Urban winners attracted more patients by offering more services, and they generally appeared to have a large enough scale to operate these services efficiently.

Teaching hospital winners had higher occupancy rates than other teaching hospitals, but there was no difference in occupancy between non-teaching winners and losers. Appropriate scale of operation for the services offered, rather than high occupancy, may be the determining factor in PPS performance for the non-teaching hospitals. Labor productivity was strongly related to winning and losing for both teaching and non-teaching hospitals. Two of the factors contributing to the productivity performance of winning hospitals were reducing their length of stay more than other hospitals and using less expensive types of employees. Finally, urban hospitals that were winners had a

Table 2-14. Characteristics of Rural Hospitals with Consistently Low and Consistently High PPS Margins, Third Through Fifth Years of PPS

	Low	Middle	High
Number of hospitals	218	1,700	202
Percent of all hospitals	10.3%	80.2%	9.5%
Average PPS margin:			
PPS 3	-23.4%	0.8%	18.1%
PPS 4	-28.6	-1.1	17.9
PPS 5	-33.4	-2.6	17.6
Percent rural referrals	0.9%	11.1%	19.3%
Percent accredited	48.2	66.0	64.9
Distribution by size:			
<50 beds	60.1%	42.7%	53.0%
50-99 beds	26.6	34.3	22.3
100-169 beds	10.1	15.1	12.9
170+ beds	3.2	7.9	11.9
Other characteristics (average):			
Change in length of stay (PPS 1-PPS 5)	7.8%	0.1%	-1.4%
Productivity*	11.1	12.7	14.3
Change in admissions (PPS 1-PPS 5)	-29.7%	-22.1%	-14.4%
Occupancy	37.9%	43.6%	47.2%
County to state wage index	-4.0%	-5.0%	-6.0%
Outlier payments to PPS payments	1.7%	1.3%	0.9%
Transfers-out per 10,000 admissions	699.9	582.9	529.7

Note: Data for each PPS year correspond to each hospital's cost reporting period beginning in that year. For instance, PPS 3 includes data from each hospital's cost report beginning during Federal fiscal year 1986.

* Defined as case-mix adjusted admissions per skill-mix adjusted FTE.

SOURCE: ProPAC analysis of Medicare Cost Report data and American Hospital Association Annual Survey.

higher than average proportion of Medicaid patients and were more likely to receive DSH payments, reflecting the large payment adjustment these hospitals receive.

Rural Hospitals—Rural referral centers were more likely than other rural hospitals to be winners. Rural winners were also likelier to be accredited by the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) than other hospitals. Of the small PPS winners in rural areas, 72 percent had a swing-bed unit, compared with 58 percent of the small PPS losers. Although small rural hospitals are slightly more likely to be PPS losers, half of the rural winners had fewer than 50 beds. Surprisingly, the 50-to-99 and 100-to-169 bed hospitals were less likely to be winners. It is possible that rural areas can better support smaller hospitals. Rural hospitals with 170 or more beds were slightly more likely than average to be PPS winners. However, many of these hospitals are rural referral centers, which receive higher payments than other rural hospitals under PPS.

Rural hospitals that were winners decreased their lengths of stay, increased their market area share of admissions, and had a smaller decline in admissions than other hospitals. Furthermore, admissions to winning hospitals were slightly less volatile on a year-to-year basis.

Winning rural hospitals did not have higher wage index values than other rural hospitals, but the average wage in their county was lower than the average for the rest of their state. A lower percentage of payments was attributable to outliers in the winning group compared with other hospitals, even though fewer patients were transferred elsewhere.

Interestingly, rural hospitals that were winners were not more dominant in terms of admissions share in their area. Equally surprising, the counties with winning hospitals did not experience higher population growth, nor did they have higher incomes per capita than other counties. They did, however, have more physicians per capita, which could be a significant influence in maintaining admissions volume.

Like their urban counterparts, rural hospitals that were winners were more likely to offer exempt services, alternative care services, and outreach services. However, they were less likely to provide specialized services such as intensive care units, open-heart surgery, and magnetic resonance imaging (MRI). Although attracting patients is critical to the success of a rural hospital, providing cost-effective services is possibly more important than offering the most sophisticated services. Further, rural winners had slightly lower capital costs as a percent of total costs than rural losers.

Summary—Payment variables, which are intended to correct for circumstances beyond the hospital's control, influence but do not completely determine performance under PPS. Teaching hospitals and hospitals that receive DSH payments are more likely to be winners under PPS. However, a number of hospitals that do not offer teaching programs and do not receive DSH payments are also successful under PPS. Moreover, there are hospitals that receive IME and DSH payments that are losers under PPS. The case-mix index and the wage index appear to have no consistent effect.

Winners are hospitals that reduced length of stay, controlled labor costs in relation to others in their market area or state, and offered more services to attract patients. At least in urban areas, winning hospitals also used less expensive mixes of labor. For rural hospitals, winning depended on slowing the decline in admissions and improving their share of area admissions. These factors are generally within the hospital's control, suggesting that hospitals can influence their own performance under PPS, at least to some extent, through good management.

OVERALL HOSPITAL FINANCIAL STATUS

Policy makers are showing increasing interest in analyzing the overall financial status of the hospital industry. One reason for this is that the effects of Medicare payment policy are not independent of the policies adopted by other payers and vice versa. Another is the belief that Medicare beneficiaries' continued access to hospital care depends on hospitals' overall financial strength. Hospital financial status has several dimensions and may be measured in different ways. This section begins with data on hospital resources and then discusses total expenses and revenues. Next, the trend in financial status as represented by total margins is presented,

followed by a comparative analysis of PPS and total margins. The section concludes with data on other financial indicators.

Hospital Resources

The provision of hospital care requires many types of resources, including labor, capital, and other non-labor resources like pharmaceuticals, insurance, and food. The mix of these resources is critical in determining the nature, quality, and cost of the care provided.

This section first describes the use of hospital inpatient capacity, which is a key determinant of hospital resource use. Changes in hospital employment and productivity are then reviewed, followed by a discussion of non-labor inputs. Finally, capital costs and tax-exempt financing, including access to debt markets, are addressed.

Inpatient Utilization—The extent to which inpatient capacity is used partially determines overall hospital costs. This is because the costs associated with some resources, such as plant and equipment, are fixed. As the number of patients increases, these fixed costs can be spread across more patients and the cost per patient declines.

The use of inpatient capacity has declined substantially since PPS was introduced. While the number of beds has decreased an average of 1.2 percent per year since 1984, the decline in bed capacity generally has not kept pace with reductions in average length of stay and the number of admissions (see Table 2-15). In 1990, the number of hospital beds decreased by about 0.9 percent, but occupancy remained at a level similar to prior years. The average occupancy rate of 64.5 percent in 1990, however, is significantly below the average of 74.6 percent during 1980-1983. The largest decline in admissions and occupancy occurred in 1984 and 1985, but the occupancy rate stabilized somewhat in the late 1980s while the number of admissions continued to fall.

Changes in Hospital Employment—In the early 1980s, hospital employment levels were increasing. In 1984, however, there was a substantial decrease in overall employment, including reductions in the numbers of full-time and part-time personnel (see Table 2-16). These declines were attributable to falling admissions and length of stay, and occurred despite an increase in outpatient visits during this period. After 1985, employment began to grow again, with the rate of increase in part-time personnel exceeding the increase in full-time personnel. In 1989, for example, the number of part-time personnel rose 5.7 percent, compared with 2.6 percent for full-time personnel. Expanded

Table 2-15. Change in Average Hospital Occupancy Rate and Number of Beds, 1980-1990

Year	Occupancy Rate	Percent Change	Number of Beds*	Percent Change
1980	75.9%	1.9%	970,500	1.2%
1981	75.8	-0.1	986,900	1.7
1982	74.6	-1.6	997,700	1.1
1983	72.2	-3.2	1,003,700	0.6
1984	66.6	-7.8	992,600	-1.1
1985	63.6	-4.5	974,600	-1.8
1986	63.4	-0.4	963,100	-1.2
1987	64.1	1.1	954,500	-0.9
1988	64.5	0.6	942,300	-1.3
1989	64.9	0.6	930,100	-1.3
1990	64.5	-0.6	921,400	-0.9
Averages:				
1980-1983	74.6	-0.8	989,700	1.1
1984-1990	64.5	-1.6	954,100	-1.2

* Numbers of beds are rounded to nearest 100.

SOURCE: American Hospital Association National Hospital Panel Survey.

Table 2-16. Change in Hospital Employment, 1981-1989 (In Percent)

Year	Full-Time Personnel	Part-Time Personnel	Unadjusted FTEs	Average Skill Mix
1981	3.6%	10.4%	4.5%	-0.1%
1982	1.9	3.5	2.2	0.2
1983	0.7	1.8	-0.2	0.7
1984	-2.2	-4.1	-2.5	0.7
1985	-1.2	2.0	-0.8	0.3
1986	1.1	0.7	1.0	1.0
1987	2.8	3.0	2.9	0.1
1988	2.6	5.3	2.8	-0.1
1989	2.6	5.7	3.0	-0.1
Averages:				
1981-1983	2.1	5.2	1.5	0.3
1984-1989	0.9	1.7	1.0	0.3

SOURCE: American Hospital Association Annual Survey and the Bureau of Labor Statistics (for average wage levels by labor category, used to measure skill mix).

use of part-time staff has helped hospitals to recruit nurses and other patient care personnel, as well as to improve efficiency by aligning staffing levels with fluctuating volume. In 1989, labor expenses were responsible for about 45 percent of total hospital expenses.

The average skill mix of the hospital work force has changed significantly during the 1980s.[9] From 1982 through 1987, skill mix increased by an average of more than a half percent per year. In 1988 and 1989, however, there were small reductions in skill mix, largely as the result of shortages in registered nurses and other professional personnel.

The general trend toward using more skilled workers was most evident for nursing personnel (see Table 2-17). Between 1981 and 1987, the proportion of all nursing personnel that were RNs increased from about 49 percent to 65 percent. Somewhat smaller increases in the proportion of professional personnel occurred in occupational therapy and physical therapy during this period. For medical records and pharmacy, the proportion of professional employees remained fairly steady throughout the decade, with small declines in 1988 and 1989.

After adjusting for skill-mix changes, hospitals continue to incur higher labor expenses per full-time equivalent employee. Total compensation increased about 12 percent per year in the early 1980s, but these increases abated in 1984 (see Table 2-18). This reflected a lower level of inflation in the general economy, as well as hospitals' responses to PPS incentives. For total compensation per FTE, there was an average annual increase of only 3.8 percent from 1985 to 1987, but the increase accelerated to 6.8 percent in 1988 and 1989. These more recent increases were driven primarily by substantial growth in benefit expenses per FTE, reflecting rising health insurance expenses. Higher wages necessary to respond to shortages of nursing and other allied health personnel also influenced the 1988 and 1989 increases.

Table 2-18. Change in Labor Expenses Per FTE, 1981-1989 (In Percent)

Year	Salary Expenses	Benefit Expenses	Total Compensation
1981	11.8%	17.1%	12.5%
1982	11.8	18.4	12.7
1983	9.4	15.4	10.3
1984	6.7	10.0	7.2
1985	4.1	6.0	4.4
1986	3.6	1.2	3.2
1987	3.9	2.4	3.7
1988	7.0	7.8	7.1
1989	5.7	10.9	6.5

Note: Expenses and total compensation are adjusted for changes in skill mix.

SOURCE: American Hospital Association Annual Survey.

Hospital Labor Productivity—One of the key factors determining the level of hospital cost inflation is the change in productivity, or how much product is obtained for the resources spent. Increased productivity implies that the hospital is either producing more output with the same resources or the same output with fewer resources. The Commission uses the number of full-time equivalent employees as its resource, or input, measure. Traditionally, it has defined output as the number of admissions, with an adjustment for real case-mix change. The resulting productivity measure of admissions per FTE, which ProPAC calls aggregate productivity, implicitly assumes that hospital services are inputs contributing to the quality of the final output, a completed admission.

Table 2-17. Professional Personnel in Various Labor Categories, 1981-1989 (In Percent)

Labor Category	1981	1982	1983	1984	1985	1986	1987	1988	1989
Nursing	48.7%	50.5%	57.0%	60.0%	62.5%	64.6%	65.1%	64.9%	64.9%
Medical records	16.4	16.3	16.4	16.1	15.9	15.9	16.2	15.2	15.0
Pharmacy	54.4	54.0	54.1	54.6	54.7	54.1	53.9	53.3	53.0
Occupational therapy	74.5	76.0	78.6	79.1	79.5	81.4	80.3	80.4	79.3
Physical therapy	52.7	52.9	53.5	55.1	55.9	57.0	56.9	57.0	57.2

Note: Professional personnel are registered nurses, medical records administrators, licensed pharmacists, occupational therapists, and physical therapists.

SOURCE: American Hospital Association Annual Survey.

The Commission has developed two additional measures that permit changes in aggregate productivity to be scrutinized in more detail. The first measure, which ProPAC calls intermediate productivity, provides information regarding the efficiency of hospitals in producing intermediate services (X-rays, surgeries, days of nursing care, and so forth). The second measure examines changes in the number and type of intermediate services that hospitals produce, after controlling for changes in the complexity of patients treated. These case-mix constant service increases can be reflected in longer lengths of stay, greater use of existing technology, or the adoption of expensive new technology to provide service add-ons or substitute for less complex procedures. For further discussion of these two productivity indicators, see ProPAC's March 1991 *Report and Recommendations to the Congress*.

Before PPS was introduced, increases in the number of employees outpaced admissions growth, resulting in declining aggregate productivity (see Table 2-19). This decline ended in 1983, however, in response to the incentives of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) and, possibly, in anticipation of PPS. In the first two years of PPS, hospitals were uncertain about the consequences of prospective payment and responded strongly to its incentives. Even in the face of declining admissions, the work force was reduced enough to produce aggregate productivity increases in both 1984 and 1985.

In the next two years, however, hospitals were bolstered by high early PPS margins. During this period, hospitals expanded their work force to more than erase the previous reductions, resulting in a decline in aggregate productivity. More recently, PPS margins have fallen considerably from their 1985 high point. This factor, coupled with an upturn in adjusted admissions, helped produce a small productivity improvement (0.4 percent) in 1988 and only a small decline (0.7 percent) in 1989. It is possible that 1988 could represent the beginning of a period of stability in aggregate productivity. Hospital patient volume is projected to continue increasing, but with hospitals experiencing extensive financial pressure, they may not respond with either significant increases in the number of workers or growth in employee skill mix.

Over the first six years of PPS, aggregate productivity has increased by a cumulative 0.3 percent (see Figure 2-4). This small net change is the result of the significant increase of 1984 and 1985, the significant decline of 1986 and 1987, and the relative stability of 1988 and 1989.

Table 2-19. Change in Aggregate Productivity and Its Component Measures, 1981-1989 (In Percent)

Year	Adjusted Admissions[a]	Case-Mix Adjusted Admissions[a]	Total Service Output	Full-Time Equivalent Employees[b]	Aggregate Productivity[c]	Case-Mix Constant Intensity	Intermediate Productivity[d]
1981	0.4%	1.4%	4.0%	4.4%	-3.0%	2.6%	-0.4%
1982	0.6	1.6	3.3	2.4	-0.9	1.8	0.9
1983	-0.5	0.5	2.9	0.4	0.1	2.3	2.4
1984	-1.4	0.8	-1.7	-1.8	2.7	-2.6	0.1
1985	-2.3	0.1	-2.1	-0.5	0.6	-2.2	-1.6
1986	-1.0	1.1	3.5	2.1	-1.0	2.4	1.5
1987	-0.5	1.3	3.8	3.0	-1.7	2.5	0.8
1988	1.2	3.1	4.7	2.7	0.4	1.6	2.0
1989	0.5	2.3	3.1	3.0	-0.7	0.8	0.2

[a] Adjusted for outpatient activity.

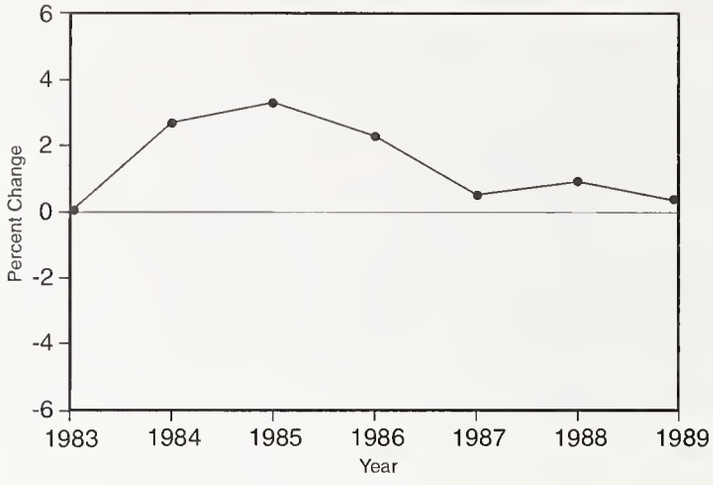
[b] Adjusted for skill-mix change.

[c] Defined as case-mix adjusted admissions per FTE.

[d] Defined as total service output per FTE.

SOURCE: ProPAC (for the real case-mix change estimates), hospitals and related services component of the Consumer Price Index (for total service output), and the American Hospital Association Annual Survey.

Figure 2-4. Cumulative Change in Aggregate Productivity, 1983–1989 (In Percent)



Note: Aggregate productivity defined as the ratio of admissions to FTE employees. Admissions are adjusted for outpatient activity and real case-mix change, and FTEs are adjusted for skill-mix change.

SOURCE: ProPAC estimates (for case-mix adjustment) and the American Hospital Association Annual Survey.

Case-mix constant intensity of services grew rapidly in 1981 and 1982. Although hospitals became slightly more efficient in their production of intermediate services during this period, the net effect of the increased intensity was to lower overall productivity. Under TEFRA, hospitals nearly stopped hiring additional personnel, while service intensity continued to increase. This resulted in a 2.4 percent rise in intermediate productivity and contributed to improved overall productivity. As part of the initial response to prospective payment, however, hospitals reduced intensity of services significantly. Even though the cutback in number of employees was not commensurate with this intensity decrease, the two factors together produced the improved overall productivity observed during this period.

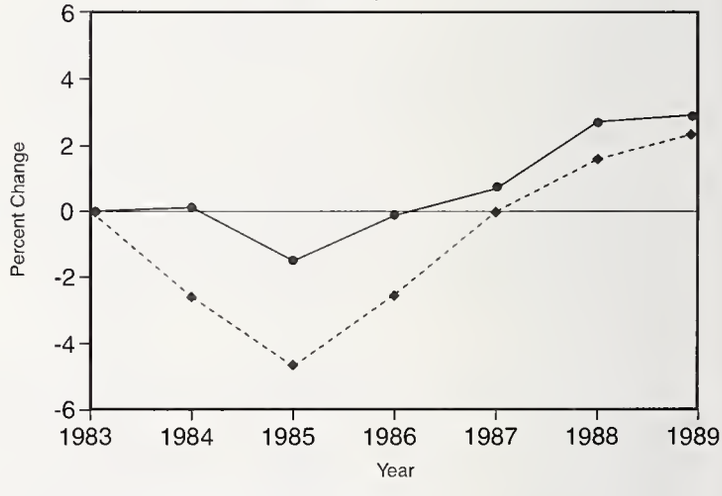
In 1986 and 1987, service intensity rose faster than the number of FTEs. Hospitals improved their efficiency in producing intermediate services, but the intensity increase was large enough to drive overall productivity downward. Finally, intensity growth moderated in 1988 and 1989, while intermediate productivity continued its upward climb, providing further evidence that the industry might be entering a trend of stable or improved overall productivity.

Since PPS has been in effect, the cumulative growth in intermediate productivity has narrowly exceeded the cumulative growth in intensity of services (see Figure 2-5). The small difference between these two outcomes produced the net improvement in aggregate productivity of 0.3 percent cited earlier.

The Commission is investigating whether concentration in certain types of inpatient cases has a positive impact on productivity. Economies of scale through concentration may result from hospital staff and physician proficiency as well as use of specialized equipment and personnel. ProPAC will publish a technical report on this topic later in the year.

Non-Labor Costs—In 1990, approximately 37 percent of total hospital expenses were for non-labor resources other than capital.[10] These include such items as pharmaceuticals, food, energy, malpractice insurance, and surgical and medical instruments. Since PPS was implemented, non-labor expenses have grown faster than labor expenses in every year. From 1984 through 1987, the difference was substantial—an average of over three

Figure 2-5. Cumulative Change in Case-Mix Constant Intensity of Services and Intermediate Productivity, 1983–1989 (In Percent)



Note: Intermediate productivity is defined as the ratio of services to FTE employees. FTEs are adjusted for skill-mix change.

SOURCE: American Hospital Association Annual Survey and the hospitals and related services component of the Consumer Price Index.

percentage points annually. From 1987 through 1990, the difference was a more modest 0.8 percentage points per year.

The reasons for the higher growth in non-labor expenses are not entirely clear. There is evidence that the prices of the supplies and services hospitals purchase have been rising faster than general inflation.[11] For several years, most of this higher price inflation has been driven by two items—malpractice insurance and pharmaceuticals. Changes in the mix or quantity of the non-labor inputs hospitals use and qualitative improvements in the supplies and services purchased have undoubtedly also contributed to higher non-labor cost increases.

Capital Costs—In 1990, capital depreciation and interest expense represented about 9.2 percent of hospital operating costs (see Table 2-20). This is slightly less than the proportion in 1989. From 1980 until 1987, capital costs assumed a growing share of hospital costs each year. Just prior to and immediately after the implementation of PPS, capital costs grew substantially faster than operating costs. Even though the rate of growth in capital costs fell over this period, the rate of growth in operating costs declined even more.

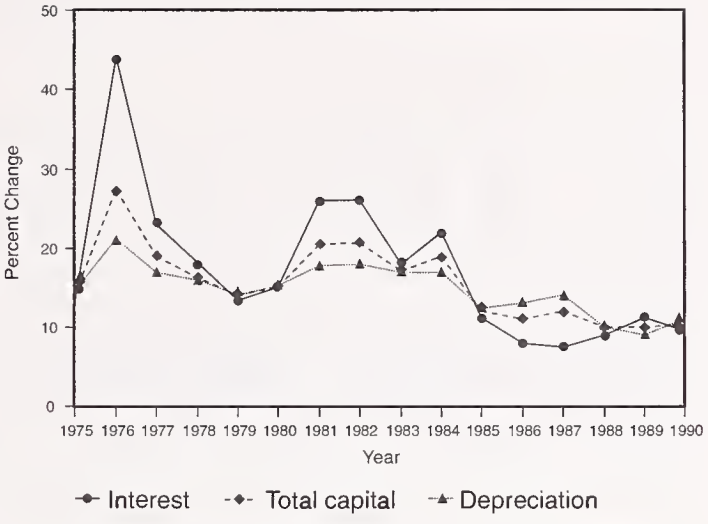
Capital costs increased about 10.4 percent from 1989 to 1990, slightly higher than the growth rate in the previous two years (see Figure 2-6). Depreciation expense, approximately 66 percent of total capital costs, rose 10.8 percent. Interest expense increased less than 9.5 percent, which was slower than the 1989 increase of over 11 percent but faster than the growth from 1986 through 1988.

Table 2-20. Change in Capital as a Proportion of Total Cost and Capital as a Proportion of Operating Cost, 1980-1990

Year	Capital/ Total Cost	Annual Percent Change	Capital/ Operating Cost	Annual Percent Change
1980	6.2	-1.6%	6.6	-1.5%
1981	6.3	1.6	6.7	1.5
1982	6.5	3.2	7.0	4.5
1983	6.9	6.2	7.4	5.7
1984	7.9	14.5	8.6	16.2
1985	8.3	5.1	9.1	5.8
1986	8.4	1.2	9.2	1.1
1987	8.5	1.2	9.3	1.1
1988	8.5	0.0	9.3	0.0
1989	8.5	0.0	9.3	0.0
1990	8.4	-1.2	9.2	-1.1

SOURCE: ProPAC analysis of American Hospital Association National Hospital Panel Survey.

Figure 2-6. Change in Capital Costs: Depreciation, Interest, and Total Capital, 1975–1990 (In Percent)



SOURCE: American Hospital Association National Hospital Panel Survey.

Hospital capital costs would be expected to increase as hospitals replace historical capital depreciation costs, based on the original prices of old assets, with higher current costs resulting from capital projects they undertake. Currently, the rate of increase is the subject of considerable interest because, without a legislative change, Medicare will begin paying for hospital capital costs on a prospective, per-case basis in fiscal year 1992. This new payment system was developed to provide hospitals with incentives to control the increase in capital costs. After the system is fully implemented, payment increases will be tied to a capital update factor, rather than to actual cost increases.

Tax-Exempt Debt Financing and Access to Debt Markets—Debt financing has become a critical part of hospital capital financing. In 1989, for example, about 23 percent of 1,287 hospital construction projects reported in the American Hospital Association (AHA) Health Care Construction Report were financed by tax-exempt debt.[12] Equity financing accounted for 43 percent of all

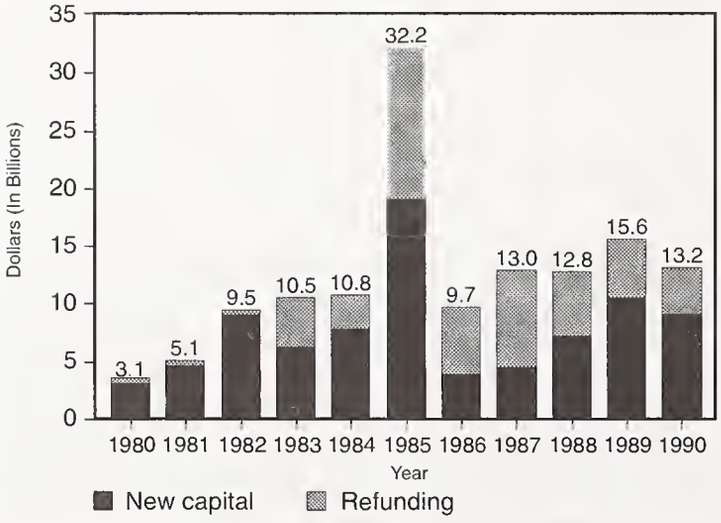
project financing. Urban hospitals, particularly those with more than 685 beds, relied most heavily on tax-exempt financing, and larger construction projects were more likely than smaller projects to be financed by debt.

In 1990, total health care and nursing home tax-exempt municipal bond volume was approximately $13.2 billion (see Figure 2-7). This represents a 16 percent decrease from 1989. Tax-exempt bond volume surged in 1985 because of uncertainty over pending tax reform legislation. A large portion of the bond volume in 1986 and 1987 (56 percent and 65 percent, respectively) was related to refunding of prior issues. In recent years, however, a larger portion of the bond volume has been for new capital: 67 percent in 1989 and 68 percent in 1990. General acute care hospitals account for about 80 percent of bond volume.

Hospitals' access to tax-exempt financing is contingent on several factors. One is the credit rating of the health care facility, which is based on a credit risk evaluation. Credit ratings are based on such factors as the strength of the industry, the hospital's market position and operating efficiency, and the adequacy of hospital cash flow. A higher credit rating results in a lower interest rate.

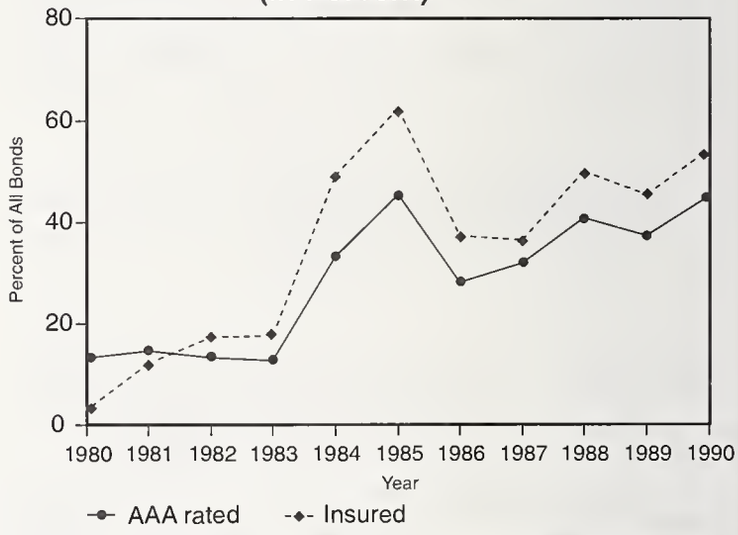
One method of obtaining a higher credit rating is to purchase credit enhancements such as bond insurance or a bank letter of credit. Credit enhancements often are necessary for many hospitals to secure access to the debt market at an affordable rate. In recent years, a larger portion of hospital bonds have been backed by some form of credit enhancement. In 1990, 54 percent of the bond volume was backed by credit enhancements, compared with only 3 percent in 1980. Further, the proportion of bond issuances with a AAA rating has risen steadily along with the proportion backed by credit enhancement (see Figure 2-8). This reflects the fact that lower rated bond packages have become less marketable over time because market analysts have generally lowered their assessment of the financial security of the hospital industry. In recent years, hospitals have increasingly been able to obtain the top rating only by buying insurance or a letter of credit, which raises the cost of obtaining capital.

Figure 2-7. Health Care and Nursing Home Tax-Exempt Municipal Bond Volume, 1980–1990 (In Billions)



SOURCE: Securities Data Co., Inc., under contract to ProPAC.

Figure 2-8. Insured and AAA Rated Bonds, 1980–1990 (In Percent)



SOURCE: Securities Data Co., Inc., under contract to ProPAC.

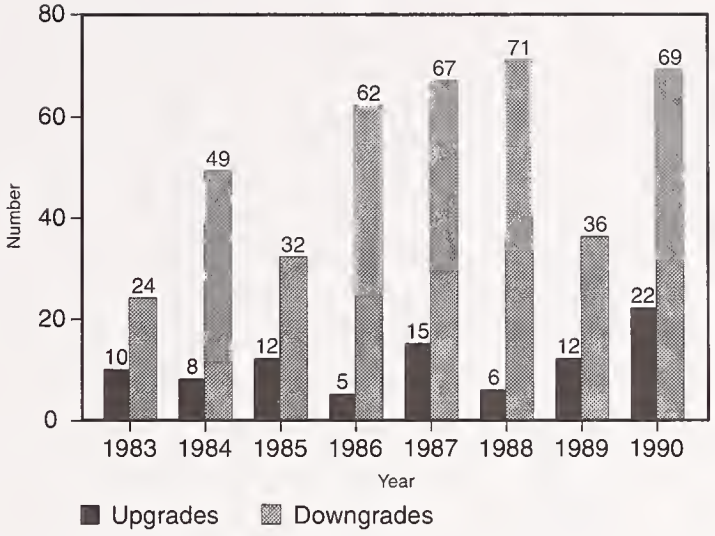
Recent information indicates that it is nearly impossible for certain types of hospitals to purchase credit enhancement instruments. For example, bond insurance companies generally will not cover hospitals with fewer than 200 staffed beds. This is because most of the bond defaults in the past two years have involved smaller facilities. While some of these hospitals are obtaining capital, it is at substantially higher rates than available to larger and higher rated institutions.[13]

Bond ratings also reflect the market's perceptions of a hospital's financial viability. Since 1983, the number of changes in hospital bond ratings has increased (see Figure 2-9). From 1983 through 1990, downgrades of bond ratings outpaced upgrades every year. In 1983, the ratio of downgrades to upgrades was 2.4 to 1. It increased to 12.4 to 1 in 1986 and was nearly 12 to 1 again in 1988. In 1989 and 1990, the ratio decreased to about 3 to 1, but one of the factors cited for this relative improvement is the fact that rating agencies fell behind in their credit reviews. Between 1983 and 1990, there were 410 downgrades and 90 upgrades, a ratio of nearly 5 to 1.

A 1988 study by Health Care Investment Analysts, Inc., indicated that about 25 percent of all hospital bond downgrades were from the A category into the lowest investment grade category (BBB). Another 13 percent moved into a non-investment grade rating, which significantly hampers their marketability.

Most likely to be downgraded are the bond issues of rural hospitals and small institutions located in or near urban areas. While specific financial problems contribute to some of the downgradings, they were largely attributed to general market conditions. In addition to competition and market power, other factors, including declining occupancy and deteriorating third-party reimbursement, were cited.

Figure 2-9. Hospital Bond Rating Changes: Upgrades and Downgrades, 1983–1990



SOURCE: Standard & Poor's.

Much of the increased reliance on outpatient revenue can be explained by the shift to outpatient service settings described in Chapter 3. The largest increases in the outpatient proportion of revenues occurred during the first two years of PPS, reflecting both the reduction of ancillary services during inpatient stays in response to the incentives of PPS and the utilization review efforts of the Federal Peer Review Organizations and private payers. Outpatient revenue has grown at a faster pace than inpatient revenue in every year through 1990.

Outpatient revenue per visit has grown rapidly as well, at an average annual rate of 11.3 percent from 1984 to 1990, compared with 8.9 percent for inpatient revenue per admission. This difference may reflect the shift of more complex procedures from the inpatient setting, as well as hospitals having to manage within more stringent controls on inpatient payments than outpatient payments.

Non-patient revenue has also become more important in recent years. Sources of this revenue include philanthropy; government grants; interest on endowments; and revenue from services and concessions such as physician office buildings, parking lots, and gift shops. Non-patient revenue has grown even faster than outpatient revenue since PPS has been in effect, an average of 11.6 percent per year. However, it still represents only 5 percent of total hospital revenue.

Hospital Expenses and Revenues

The keys to a hospital's overall financial status are the flows of total expenses and total revenues. The sources of hospital revenue by the types of services that generate them are described first below. Then trends in total expenses and revenues are compared over time to indicate the extent to which hospitals have succeeded in controlling the increase in expenses and whether revenues have kept up with this increase.

Sources of Hospital Revenue—The mix of hospital revenue by type of service has changed over time (see Table 2-21). Outpatient services are an increasingly important revenue source, comprising 22.5 percent of revenue in 1990, compared with 12.5 percent in 1980.

Table 2-21. Change in Hospital Revenue and Proportion of Revenue, by Source 1980-1990 (In Percent)

Year	Change in Revenue: Inpatient Revenue Per Admission	Change in Revenue: Outpatient Revenue Per Visit	Change in Revenue: Other Revenue Per Adjusted Admission	Proportion of Revenue: Inpatient	Proportion of Revenue: Outpatient	Proportion of Revenue: Other
1980	14.5%	15.8%	9.7%	83.2%	12.5%	4.3%
1981	17.3	19.2	23.6	82.7	12.7	4.5
1982	16.2	16.8	12.9	82.7	12.9	4.4
1983	10.4	11.5	5.5	82.4	13.4	4.2
1984	8.6	12.4	10.9	81.3	14.4	4.3
1985	8.9	13.2	15.6	79.3	16.1	4.6
1986	8.5	8.3	6.9	78.0	17.5	4.5
1987	8.9	10.7	11.2	76.8	18.6	4.6
1988	8.5	11.4	14.5	75.2	20.0	4.8
1989	9.4	11.5	12.0	74.0	21.1	4.9
1990	9.2	11.7	10.1	72.5	22.5	5.0
Averages:						
1980-1983	14.6	15.8	12.7			
1984-1990	8.9	11.3	11.6			

SOURCE: ProPAC estimates using data from the American Hospital Association National Hospital Panel Survey.

Trends in Total Hospital Expenses and Revenues—There was almost no real (inflation-adjusted) increase in total hospital expenses per adjusted admission in 1980 (see Figure 2-10). Although the nominal increase was 11.9 percent, this almost exactly matched the general rate of inflation in that year. In each of the next three years, however, the real increase in total expenses per adjusted admission was above 6 percent, as the nominal increase accelerated while general inflation slowed. In 1984—the first year of PPS—the increase fell sharply to 3 percent. After another surge from 1985 through 1987, the increase leveled off at just over 4 percent in 1988 and 1989. In 1990, it dropped slightly below 4 percent.

The patterns of hospital expense and revenue change are quite similar. Revenues per adjusted admission increased at a slightly higher rate than expenses in the early 1980s, but never by more than a half percentage point. In 1984, as hospitals sharply cut their rate of cost increase in response to the incentives of PPS, real revenues per adjusted admission rose by 4.2 percent, compared with 3 percent for real expenses. This was the largest difference between the two in the decade. The last five years have been mixed as to whether revenues or expenses have increased faster, but in only one of those years was the difference more than a half percentage point.

Total Hospital Margins

The total margin is a useful and well-known indicator of a hospital's overall financial status. However, care must be exercised in interpreting total margin data. Some caveats are discussed below, followed by a presentation of the trend in total margins.

The Total Margin as an Indicator of Overall Hospital Financial Status—The total margin compares hospital revenues and expenses for all inpatient and outpatient care as well as non-patient care activities. Interpreting Medicare Cost Report data on total margins is difficult because these reports depend on the accounting practices of the hospital and the hospital's relationship with any related organizational entities. For instance, hospitals affiliated with a chain or a medical school may differ from others in their reporting due to the accounting conventions they use to allocate both costs and revenues between organizations. Through corporate restructuring, the costs and revenues of some services normally associated with a hospital may be

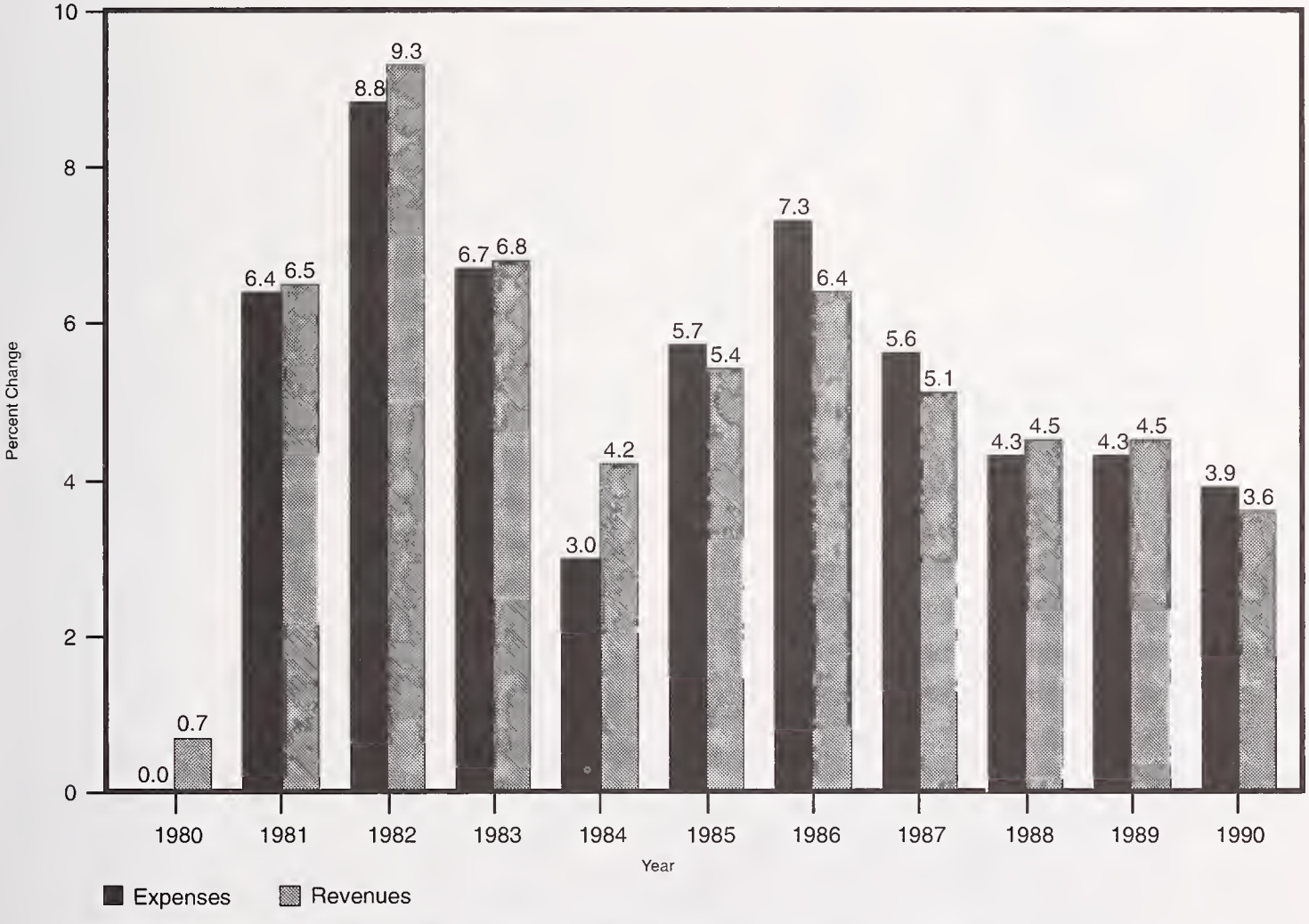
accounted for entirely outside of the hospital entity. In this situation, the total hospital margin would not reflect the gain or loss incurred in operating the services.

There are also questions about the accuracy of the data reported, which ProPAC has devoted considerable attention to resolving. An analysis of a matched hospital sample found that during the first four years of PPS, edited data from the cost reports produced an average total margin about a half percent lower than AHA Annual Survey data for the same hospitals.[14] Based on these findings, ProPAC believes that total margins derived from the Medicare Cost Report provide valuable information on patterns and trends in overall hospital financial performance.

Trends in Total Margins—As was the case for the PPS margins described above, the aggregate total margin for all hospitals decreased over the first four years of PPS (see Table 2-22). The decline in the total margin, however, was not as steep as that in the PPS margin. The total margin was 7.3 percent in the first year of PPS and 3.5 percent in the fourth year. In the next two years, the total margin increased slightly to 3.8 percent, and more recent data from the AHA indicate that this stability has continued through 1990. The AHA data indicate that total margins are now comparable to the levels of the early 1980s. In fact, the aggregate total margin is considerably higher now than it was at any time during the 1970s.

In the first year of PPS, the average total margin for urban hospitals was 2.6 percentage points higher than the rural hospital average. This gap narrowed steadily and then disappeared in the fifth year. The trend continued in the sixth year, with the rural

Figure 2-10. Change in Real Hospital Expenses and Revenues Per Adjusted Admission, 1980–1990 (In Percent)



SOURCE: American Hospital Association National Hospital Panel Survey and Bureau of Labor Statistics.

hospital margin exceeding that for urban hospitals by 0.4 percentage points. Hospitals in large urban areas have consistently had lower total margins than hospitals in other urban areas. Rural referral centers have consistently had higher total margins than other rural hospitals, and sole community hospitals have also had higher total margins than hospitals in the other rural category. However, the gap between sole community and other rural hospital margins disappeared in the sixth year of PPS.

Table 2-22. Total Hospital Margins, by Hospital Group, First Six Years of PPS (In Percent)

Hospital Group	PPS 1	PPS 2	PPS 3	PPS 4	PPS 5	PPS 6
All hospitals	7.3%	6.5%	4.6%	3.5%	3.6%	3.8%
Urban	7.7	6.8	4.8	3.6	3.6	3.7
Rural	5.1	4.8	3.2	3.1	3.7	4.1
Large urban	7.5	6.4	4.3	2.8	2.9	2.8
Other urban	8.0	7.2	5.5	4.6	4.6	4.7
Rural referral	6.8	7.4	5.4	5.2	5.6	5.8
Sole community	5.0	4.4	2.9	2.7	2.9	3.0
Other rural	4.2	3.3	1.8	1.8	2.5	3.1
Major teaching	5.2	5.4	3.3	2.3	2.5	1.4
Other teaching	8.2	7.1	5.4	3.9	4.0	4.3
Non-teaching	7.3	6.4	4.4	3.7	3.8	4.2
Disproportionate share:						
Large urban	5.7	5.1	3.0	1.5	1.7	1.1
Other urban	7.7	6.5	5.1	4.0	4.4	4.6
Rural	4.8	5.1	3.0	2.8	3.3	4.1
Non-disproportionate share	7.8	7.1	5.1	4.3	4.1	4.4
Payment adjustments:						
IME and DSH	6.2	5.6	4.0	2.6	2.9	2.6
IME only	8.8	7.8	5.7	4.5	4.3	4.5
DSH only	7.3	5.9	3.8	2.9	3.3	3.6
No IME or DSH	7.2	6.5	4.7	4.1	4.0	4.4
Urban <100 beds	5.2	4.5	2.6	2.1	2.0	2.4
Urban 100-199 beds	7.0	5.4	3.3	2.6	2.2	2.7
Urban 200-299 beds	8.0	6.9	4.4	3.4	3.1	3.8
Urban 300-399 beds	7.4	6.6	4.7	3.5	3.8	3.7
Urban 400-499 beds	8.7	8.1	6.5	4.1	4.5	4.6
Urban 500+ beds	8.3	7.4	5.6	4.4	4.5	3.9
Rural <50 beds	3.3	2.9	0.7	1.0	1.5	2.2
Rural 50-99 beds	4.7	3.4	2.0	2.2	2.6	3.0
Rural 100-149 beds	5.1	4.8	3.5	3.3	3.8	4.1
Rural 150-199 beds	5.7	5.7	4.1	3.8	4.5	5.5
Rural 200+ beds	6.9	7.7	5.4	5.1	5.7	5.6
Voluntary	6.9	6.9	4.9	3.6	3.7	3.9
Proprietary	7.1	7.1	4.5	4.8	4.0	3.4
Urban government	4.3	4.3	3.1	2.2	3.2	3.5
Rural government	3.7	3.4	2.2	2.3	2.9	3.5

Note: Data for each PPS year corresponds to each hospital's cost reporting period beginning in that year. For instance, PPS 1 includes data from each hospital's cost report beginning during the first year of PPS (FY 1984). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with PPS 3; and includes hospitals in New Jersey beginning with PPS 6. IME = Indirect medical education payments. DSH = Disproportionate share payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Major teaching hospitals have had consistently lower total margins than other teaching or non-teaching hospitals. In the fifth year of PPS, the total margin for major teaching hospitals was 2.5 percent, compared with nearly 4 percent for all other hospitals. In the sixth year, the gap widened even further. The major teaching hospital margin fell to only 1.4 percent, while those of the other teaching and non-teaching groups rose slightly to above 4 percent.

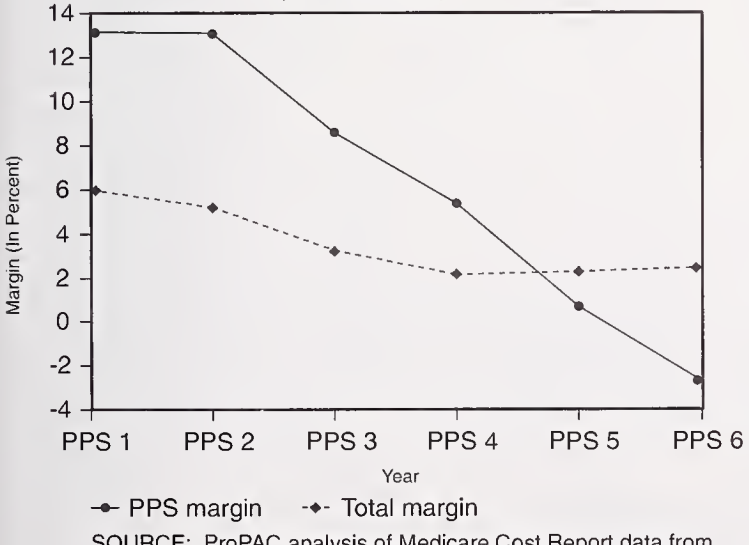
The total margins of disproportionate share hospitals in large urban areas have always been significantly below average. In the last three PPS years, the average margins of these hospitals have been less than half those for other urban disproportionate share and non-disproportionate share hospitals. Among four combined teaching and disproportionate share groups, the lowest margins have consistently been found in hospitals receiving both IME and DSH payments. The highest margins are found in teaching hospitals that do not receive DSH payments.

PPS Versus Total Margins

Both PPS and total margins are much lower now than they were when PPS began. However, the decline in PPS margins has been much steeper than the decline in total margins. In fact, the aggregate total margin for all hospitals has improved slightly over the last two years (see Figure 2-11). The PPS margin was much higher than the total margin in the first year of PPS, but by the fifth year it fell below the total margin. The disparity between the two margins continued to grow in the sixth year. This pattern indicates that relative to costs, revenue from other payers has been increasing more than Medicare payments in recent years.

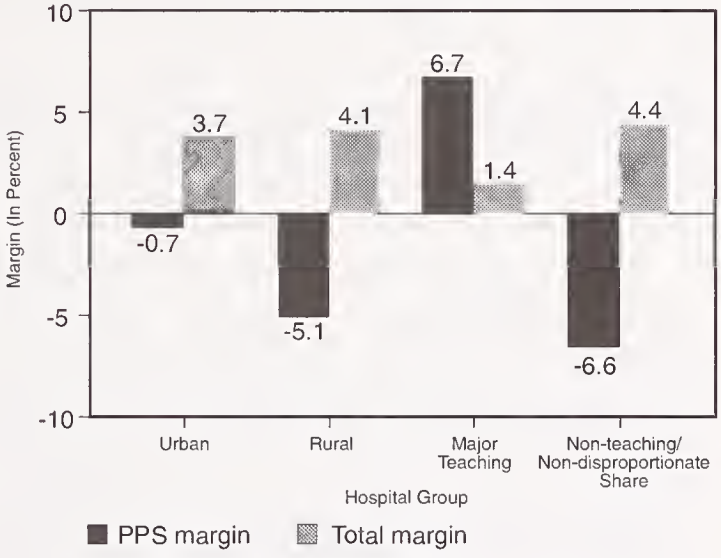
Many hospital groups have PPS and total margins that differ substantially from the pattern observed for all hospitals. For instance, for rural hospitals in the sixth year of PPS, the PPS margin was substantially below zero and the total margin was substantially above zero (see Figure 2-12). By contrast, major teaching hospitals had an aggregate PPS margin that greatly exceeded their total margin.

Figure 2-11. PPS and Total Margins, First Six Years of PPS (In Percent)



SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Figure 2-12. PPS and Total Margins for Selected Hospital Groups, Sixth Year of PPS



SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

In general, individual hospital performance under PPS is related to overall financial performance; most hospitals that do well under PPS tend to do well overall. However, there are some notable exceptions. PPS winners and losers, described earlier in this chapter, exhibit substantial variation in total margins (see Table 2-23).[15] For example, among urban PPS winners, 39 percent were also winners on the basis of total margins and 14 percent were losers.[16] Among urban PPS losers, 45 percent were also losers on total margins, and 14 percent

were winners. Thus, although PPS margins tend to be positively associated with total margins, for some hospitals they differ greatly. The distribution of rural winners and losers is similar, although fewer rural than urban hospitals have divergent PPS and total margins.

PPS and total margins are associated with hospitals' characteristics, their environments, and specific design features of PPS. For example, consistent with their high aggregate PPS margin, major teaching hospitals are highly represented among urban PPS winners. However, they are more likely than other urban PPS winners to have poor overall financial performance. Disproportionate share hospitals are also overrepresented among PPS winners with low total margins. Teaching hospitals and disproportionate share hospitals receive higher PPS payments than other hospitals because they face costs associated with their locations and missions. Both disproportionate share hospitals and major teaching hospitals tend to be located in high cost areas and provide significant amounts of care to low-income and uninsured individuals. Therefore, their prevalence among the hospitals with high PPS margins and low total margins is not surprising.

A few of the most important variables that would explain differences between PPS and overall financial performance, such as the proportion of patients who are uninsured and the proportion who are covered by employer-based insurance, are not readily available for individual hospitals. Nonetheless, analysis of available data provides some evidence about the factors associated with hospital performance.

Table 2-23. Distribution of Hospitals, by PPS Margin and Total Margin (In Percent)

	Distribution of Hospitals by Total Margin			
PPS Margin Group	Low	Middle	High	Total
Rural				
Low				
Percent of low PPS margin hospitals	55.3%	34.2%	10.6%	100.0%
Median total margin	-8.4	0.6	7.8	-3.4
Middle				
Percent of middle PPS margin hospitals	23.1	53.4	23.6	100.0
Median total margin	-5.2	2.1	8.0	2.1
High				
Percent of high PPS margin hospitals	8.2	39.3	52.5	100.0
Median total margin	-4.1	2.7	9.7	5.8
Urban				
Low				
Percent of low PPS margin hospitals	45.0	41.6	13.4	100.0
Median total margin	-5.6	2.9	10.0	0.7
Middle				
Percent of middle PPS margin hospitals	23.7	51.8	24.5	100.0
Median total margin	-3.4	3.4	9.1	3.5
High				
Percent of high PPS margin hospitals	14.3	46.8	38.9	100.0
Median total margin	-2.5	3.7	8.9	5.5

Note: Rows may not add to 100 due to rounding.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

The analysis of PPS winners and losers presented earlier in this chapter indicated that occupancy rate is associated with PPS performance for some hospital groups. Occupancy rate is also associated with overall financial performance; for each PPS margin group, the occupancy rate for hospitals with the lowest total margins is significantly lower than for other hospitals. This finding confirms a generally accepted belief that hospitals with low occupancy rates are less likely to be profitable institutions.

Hospital size is also associated with total margins. In urban areas, for all three PPS performance groups, overall winners were significantly larger than overall losers. For rural hospitals, size is positively associated with overall profitability for all hospitals except PPS losers. One explanation for the relationship between size and profitability is that larger hospitals are more likely to offer modern medical technology, which in turn attracts more physicians and patients.

In contrast to size, productivity was strongly associated with PPS performance, but was only weakly associated with total margins for both urban and rural hospitals. PPS margins may be more sensitive to productivity than total margins because PPS is a fixed, per-case payment system; hospitals with varying productivity levels receive the same per-case payment amount. Therefore, hospitals that are less productive tend to have lower PPS margins. The relationship between productivity and total margins may be weaker because some payers still use cost or charge reimbursement.

Analysis of the PPS and total margins of hospital groups and the characteristics associated with them leads to several conclusions. First, most hospitals that do well under PPS also do well overall. In addition, although Medicare payment rates are not as generous as they were in the early years of PPS, many hospitals still have significantly positive PPS margins. However, many of the hospitals that make the most money from PPS, such as teaching and disproportionate share hospitals, receive higher payment rates than other hospitals. These facilities would have very low total margins were it not for the additional revenue provided by Medicare.

The variables that are associated with poor total margins—such as teaching and disproportionate share status, occupancy rate, and size—are characteristics that may not be within hospitals' control, at least in the short run. Thus, although hospitals appear to be able to influence many of the factors associated with their performance under PPS, they may be less able to influence their overall performance.

Other Measures of Hospital Financial Status

The total margin measures profitability in the flow of revenues and expenses, which is one aspect of hospitals' financial performance. Other measures are available to assess liquidity, capital productivity, and capital structure. Information from Health Care Investment Analysts, Inc., was used to prepare this analysis, which is based on the median values of a set of key financial ratios.[17]

Liquidity—The ability of hospitals to use short-term assets to meet short-term liabilities declined in 1989. Hospitals held smaller reserves of cash and cash equivalents, such as short-term investments, compared with their liabilities. Further, hospitals held revenue in accounts receivable longer because patient bills took more time to collect. Perhaps in response, hospitals took slightly longer to pay their bills.

Capital Productivity—The productivity of hospitals' assets remained virtually unchanged between 1988 and 1989. Overall, each dollar of new assets produced slightly more revenue but the same amount of profits as in 1988. Hospitals increased patient revenue slightly faster than they acquired new assets. However, hospitals' profits increased at the same rate as assets because expenses increased faster.

Capital Structure—In the aggregate, capital intensity in the hospital industry has continued to grow in recent years, although at a slower rate than previously. Net fixed assets per bed reached almost $96,000 in 1989, reflecting additions to hospitals' physical assets as well as declines in hospital size. There continued to be large variations in this measure of capital structure within and between hospital groups.

Since the beginning of PPS, hospitals have been using proportionately more debt to finance new assets. This increase, when combined with the decline in total margins through the fourth year of PPS, has reduced hospitals' cash flow after paying annual debt service (principal and interest). Among hospitals with bonds rated A or better by Standard & Poor's, however, the cash flow remained relatively high compared with debt service, and the decline in margins was slower. Hospitals with the highest-rated bonds showed improvements in their ability to cover debt service with cash flow.

In summary, the latest data show unfavorable trends in the capacity of hospitals to meet their liabilities. Although profitability improved slightly, cash holdings fell relative to short-term liabilities, and cash from operations fell relative to annual obligations to repay long-term liabilities. The capital intensity of the industry increased, and this was being financed by proportionately more debt. After making annual debt repayments, the amount of remaining profits in cash declined.

UNCOMPENSATED CARE

Uncompensated care costs, encompassing both charity care and bad debts, can have a substantial deleterious effect on hospital financial condition. Most non-paying patients have no health insurance, while some have inadequate insurance and others, including some Medicare patients, are unable to pay required coinsurance payments.

The Trend in Uncompensated Care

Hospital uncompensated care costs have grown steadily throughout the 1980s (see Figure 2-13). Before PPS, hospitals devoted about 5 percent of their resources to providing uncompensated care. However, overall cost growth slowed with the introduction of PPS, while the amount of uncompensated care provided accelerated. By 1986, uncompensated care accounted for 6.4 percent of total costs. The situation has improved slightly since that time, suggesting that expanded eligibility for Medicaid and other charity care programs in some states may have had a beneficial effect.

The financial impact of uncompensated care has been exacerbated by the failure of subsidies from state and local governments, which offset uncompensated care losses, to keep pace with hospital cost inflation. Increases in these subsidies lagged behind rising uncompensated care costs in the years preceding PPS, primarily because local governments were having to contend with double-digit growth in overall hospital costs. In 1984, conversely, there was a large increase in subsidy payments, made possible at least partly by a dramatic decline in overall hospital cost inflation in response to PPS. Further, state and local governments were able to keep up with the trend in total costs through 1987. But by 1989, as recessionary pressures began affecting government expenditures and tax receipts, operating subsidy payments from tax appropriations actually declined. Federally mandated expansions in Medicaid eligibility may have at least slightly reduced the need for subsidy payments to cover uncompensated care costs during this period.

The Distribution of Uncompensated Care Costs

Uncompensated care has traditionally been associated with large, inner-city teaching hospitals and with publicly owned institutions. But over the last decade, the problem has increasingly affected the entire industry. Most importantly, uncompensated care is not only an urban problem. After offsetting government operating subsidies, uncompensated care commands the same proportion of hospital resources in rural areas as in urban areas. Public hospitals continue to provide the most uncompensated care, but the proportion of all unpaid care costs net of subsidy borne by these hospitals has declined from 24 percent in 1980 to 17 percent in 1989 (see Table 2-24). Similarly, the proportion provided by major teaching hospitals has decreased from 22 percent to 18 percent, and the proportion for hospitals located in the central city portion of large metropolitan areas has fallen from 72 percent to 67 percent.

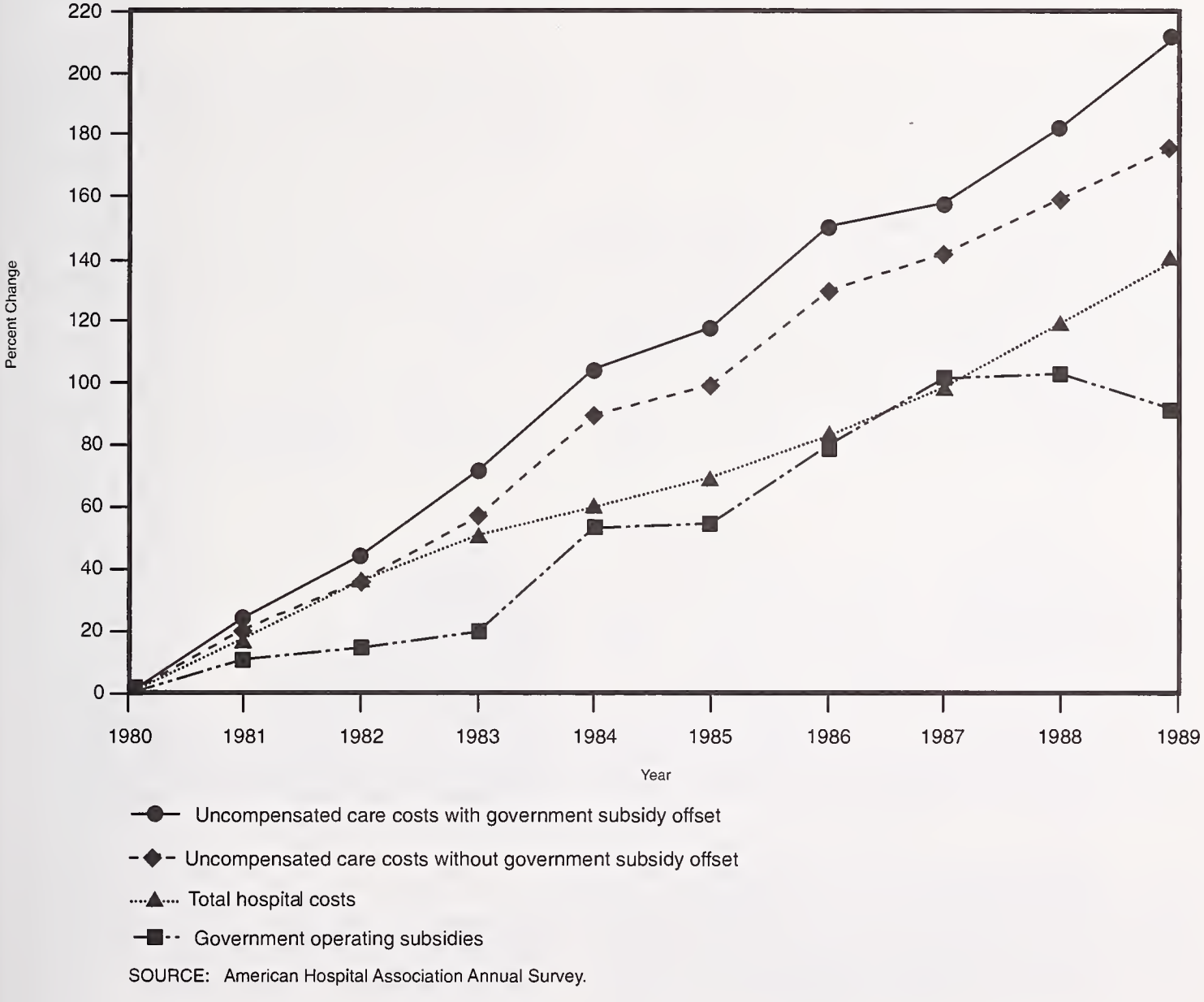
A number of factors may have contributed to the spread of the uncompensated care burden beyond public, major teaching, and inner-city hospitals. Public hospitals have been under increasing financial pressure in recent years. Many have had to downsize and are operating at virtual capacity, which may have prevented some uninsured patients from being able to seek care at these hospitals. There have also been expanded rules requiring all hospitals to treat emergency patients regardless of their ability to pay. This may have prompted some

private hospitals to cut down on their economic transfers to public hospitals. In addition, the 1980s have seen a major shift in population from central cities to suburban areas. This has included some low-income and uninsured people, who then might be expected to seek care at suburban hospitals. Finally, an increasing proportion of uncompensated care losses is coming from patients who have insurance, but cannot afford ever-larger deductibles and coinsurance payments. These patients can be found in community hospitals everywhere.

While charity care and bad debts have become a significant financial burden for a greater number and variety of hospitals, the amount of uncompensated care provided by individual hospitals varies within all of the standard hospital groups (see Table 2-25). There is substantial variation in the proportion of hospital resources devoted to uncompensated care in both urban and rural areas, among regions of the country, and among specific large cities and metropolitan areas. The distribution is equally widespread among both teaching and non-teaching hospitals, and even among government hospitals. This tremendous diversity complicates the task of addressing uncompensated care in payment policy.

Although a hospital's uncompensated care burden is an important determinant of its overall

Figure 2-13. Cumulative Change in Hospital Uncompensated Care Costs and Government Operating Subsidies, 1980–1989 (In Percent)



SOURCE: American Hospital Association Annual Survey.

Table 2-24. Uncompensated Care Costs (With Government Subsidy Offset), by Hospital Group, 1980-1989 (In Percent)

Hospital Group	1980	1984	1987	1988	1989
Urban	85%	85%	86%	86%	86%
Rural	15	15	14	14	14
Urban central city*	72	71	69	69	67
Urban ring*	28	29	31	31	33
Major teaching	22	22	21	19	18
Other teaching	37	37	37	38	38
Non-teaching	41	41	42	43	44
Disproportionate share	55	55	53	52	51
Non-disproportionate share	45	45	47	48	49
Voluntary	70	70	71	73	75
Proprietary	6	7	8	9	8
Government	24	23	21	18	17

* Nation's 100 largest cities only.

SOURCE: American Hospital Association Annual Survey.

financial position, the Commission believes that it is not the only significant payment factor. Medicaid payment shortfalls, while less in aggregate than uncompensated care losses, have risen dramatically during the 1980s. These losses, along with uncompensated care costs, put downward pressure on

Table 2-25. Distribution of Uncompensated Care Costs (With Government Subsidy Offset), by Hospital Group, 1989

	Percentile				
Hospital Group	10th	25th	Median	75th	90th
All hospitals	0.7%	2.3%	4.3%	5.7%	8.3%
Urban	1.5	2.8	4.5	5.8	8.4
Rural	0.0	1.8	4.0	5.6	8.3
Urban central city*	1.5	2.9	4.5	5.6	8.0
Urban ring*	1.6	2.8	4.5	5.7	8.0
Major teaching	0.0	1.4	3.8	6.2	10.3
Other teaching	1.6	2.7	4.5	6.0	8.4
Non-teaching	0.5	2.2	4.3	5.6	8.2
Disproportionate share:					
Large urban	1.1	2.9	4.6	6.3	9.2
Other urban	1.7	3.2	4.8	7.5	10.8
Rural	1.4	3.0	4.7	8.2	10.3
Non-disproportionate share	0.5	2.1	4.0	5.2	7.6
Voluntary	1.6	2.6	4.5	5.9	8.2
Proprietary	2.3	3.9	4.5	4.6	6.5
Urban government	0.0	1.3	4.1	7.4	12.1
Rural government	0.0	0.0	2.9	5.6	8.7

* Nation's 100 largest cities only.

SOURCE: American Hospital Association Annual Survey.

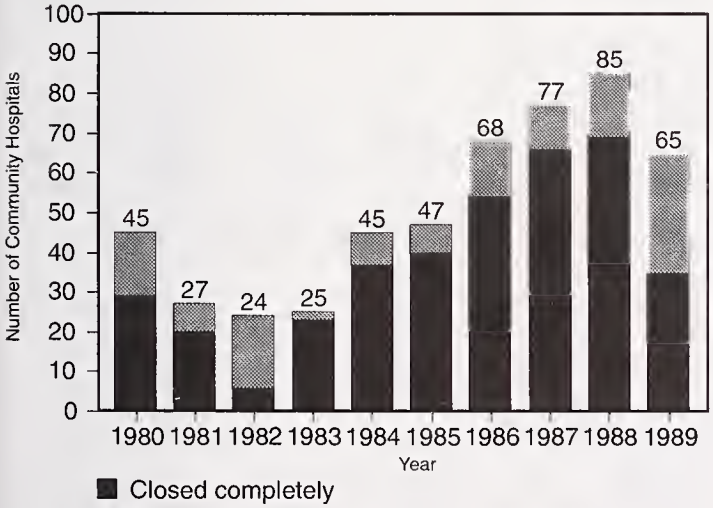
hospital profit margins. Another factor regarded as important in explaining differences in financial performance is the degree to which hospitals can generate revenues from privately insured patients through payments that are higher than costs. This practice has been called cost shifting. ProPAC is planning a comprehensive study of cost shifting to non-government payers, including the role of uncompensated care costs and Medicaid payment shortfalls, in the coming year.

HOSPITAL CLOSURES IN 1989

The number of hospital closures is often viewed as an indicator of the overall financial condition of the hospital industry, although access to care is not necessarily adversely affected by a hospital closing. Since 1980, 508 community hospitals have closed, and more hospitals closed in the second half of the decade than in the first (see Figure 2-14). When a hospital terminates inpatient services, it can either stop providing all services or it can retain nonacute care services. Relatively few hospitals converted from acute care to outpatient or long-term care until 1989, when 46 percent of the hospitals that eliminated acute care continued to provide other patient services.

The trend toward hospital conversion from inpatient to outpatient or long-term care could reflect an increase in hospital industry efficiency, since inpatient utilization of these hospitals was low and the bed supply in counties with closures was higher than in counties without closures. (See Chapter 4 for more information on the characteristics of the counties where hospitals closed.) Nearby residents may still need local access to nonacute care services, even if they are using more remote hospitals for inpatient care.

Figure 2-14. Community Hospital Closures and Conversions, 1980–1989



SOURCE: Closures data: *Hospital Closures, 1980-1989: A Statistical Profile* (Chicago, IL: American Hospital Association, 1990), 6. Conversions data: ProPAC analysis of American Hospital Association closure files data.

ProPAC compared 1984–1988 utilization and financial indicators of hospitals that closed in 1989 with those of hospitals that were still in operation in 1989. The results for hospitals that closed completely are presented here, although the results for hospitals converted to other uses were not substantially different. Urban and rural hospitals were analyzed separately because it is believed that hospitals close for different reasons in these two environments. Comparison groups of urban and rural hospitals with fewer than 200 beds were chosen since almost all the hospitals that closed were in this category.

Previous ProPAC analyses have highlighted several hospital characteristics that have been consistently associated with hospital closure, including: fewer beds, lower occupancy, declining admissions, longer lengths of stay, negative margins, higher costs per case for urban hospitals, lower likelihood of JCAHO accreditation, and for-profit status.[18] The utilization and financial indicators of the hospitals that closed in 1989 were strikingly similar to those of hospitals that closed in earlier years.

Utilization

The occupancy rates of both urban and rural hospitals that closed were lower than average as many as five years before closure in 1989 (see Table 2-26). The volume of admissions was substantially lower in the years immediately before closure. In addition, the number of inpatient surgical admissions per bed and the outpatient surgical and visit volume were much lower in hospitals that closed.

The Medicare and Medicaid patient shares of hospitals that closed and those that stayed open were similar. The overall length of stay was longer in urban hospitals that closed, which may be an indication of patient care inefficiencies. In rural

Table 2-26. Characteristics of Open Hospitals and Hospitals That Closed in 1989

Characteristics	Urban		Rural	
	Open	Closed	Open	Closed
Occupancy				
1984	62%	41%	52%	43%
1986	55	37	44	32
1988	56	33	45	27
Admissions per bed				
1984	36	20	33	30
1986	34	15	30	16
1988	33	18	29	18
Inpatient surgical operations				
1984	1,612	1,200	555	227
1986	1,377	524	425	60
1988	1,264	245	392	71
Outpatient surgical operations				
1984	576	314	160	6
1986	1,196	447	288	13
1988	1,317	420	406	20
Outpatient visits				
1984	19,830	10,656	10,000	3,059
1986	22,738	14,253	11,194	3,902
1988	29,875	13,664	14,718	6,549

Note: Excludes open hospitals with more than 200 beds.

SOURCE: ProPAC analysis of American Hospital Association Annual Survey data.

areas, on the other hand, hospitals that closed had shorter lengths of stay. This may be due to these hospitals losing their more complex cases to urban or larger rural hospitals.

Financial Indicators

Volume declines of the types experienced by hospitals that closed in 1989 generally have negative effects on financial performance. PPS operating costs were consistently higher for urban hospitals that closed, despite generally similar case-mix indexes from 1986 to 1988 (see Table 2-27). Both PPS costs per case and average case mix were lower among the rural hospitals that closed compared with those that remained in operation. PPS margins were much lower among hospitals that closed, and total margins were consistently worse than average and most often negative.

Other Hospital Characteristics

JCAHO accreditation appears to be related to hospital closure in rural areas, but not in urban areas. A much higher proportion of the urban hospitals that closed had for-profit ownership than those that remained in operation. It is difficult to interpret the ownership differences between rural hospitals that closed and those that stayed open because ownership for many rural hospitals was unknown. Urban hospitals that closed had a lower age of plant than those that stayed open, while rural hospitals that closed were slightly older than their counterparts. Hospitals that closed also offered fewer high-technology and alternative level of care services (see Chapter 4).

Summary

Hospitals that closed had lower utilization rates than hospitals that stayed open for many years before closure. The urban hospitals that closed had above average costs per case and longer lengths of

Table 2-27. Financial Performance of Open Hospitals Compared to Hospitals That Closed in 1989

Characteristics	Urban		Rural	
	Open	Closed	Open	Closed
PPS revenue per case				
1984	$3,015	$3,889	$2,059	$1,582
1986	3,461	4,009	2,212	1,678
1988	3,864	4,248	2,475	2,126
PPS operating costs per case				
1984	2,650	3,041	1,905	1,622
1986	3,183	4,511	2,242	2,140
1988	3,740	5,598	2,611	2,243
PPS margin				
1984	13.4%	15.6%	8.5%	0.8%
1986	8.5	6.4	1.6	-20.8
1988	2.9	-31.8	-1.3	-2.3
Total margin				
1984	5.7	1.7	4.3	-1.3
1986	3.1	-1.9	2.3	-4.0
1988	2.6	-10.3	2.8	-6.5

Note: Excludes open hospitals with more than 200 beds.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

stay. Higher costs despite similar case-mix levels indicates these hospitals had not been operating efficiently for several years before they closed.

The rural hospitals that closed offered fewer services and were less likely to be accredited than the rural hospitals that stayed open. The low inpatient and outpatient volume of the closed hospitals shows that they were not widely used by area residents. As inpatient medicine has become more technology-oriented, it has been increasingly difficult for these hospitals to offer many commonly used services. However, even though hospital industry efficiency may have been increased by the closing of these hospitals, concerns about access to care for area residents are raised. The areas in which hospitals that closed in 1989 were located had a higher than average proportion of minorities and rate of infant mortality.

ProPAC-sponsored research showed that travel time to the nearest hospital for residents of counties where the only hospital had closed were not unusually high. There seem to be health needs in communities where hospitals closed, yet these hospitals were not widely used and, generally, there were other hospitals in the area. (Access to health services is discussed in Chapter 4.)

CONCLUSIONS

More data on hospital financial performance are available than ever before. Yet even with these data, which raise many new questions as others are answered, it remains difficult to assess the effects of PPS.

The information presented here and the questions it raises underscore the complexity of health policy decision making. In the case of PPS, Medicare has a responsibility to pay hospitals adequately and fairly for the services they provide to beneficiaries, while encouraging both the optimal quality of care and the efficient provision of services. At the same time, Medicare is usually not the dominant source of hospital payment. Understanding how Medicare and other sources of payment interact to affect both costs and revenues is critical to the development of hospital payment policy. These interactions affect both the availability and quality of hospital care, not only for Medicare beneficiaries but for all Americans.

In accordance with the expanded scope of responsibilities given to the Commission in OBRA 1990, ProPAC will devote a greater portion of its resources to analyzing issues of overall financial status. This continues to include measuring total margins and other financial indicators relating to both operating and capital costs. But it also encompasses expanded analysis of other providers such as skilled nursing facilities, home health agencies, and ambulatory surgery centers. In addition, the Commission will examine the relationship among the Medicare program, the Medicaid program, uncompensated care, and commercial payers. These analyses will help to strike an appropriate balance between the objectives of PPS payment and the broader implications of PPS and other Medicare payment decisions for hospitals and other providers, as well as the patients they treat.

Notes to Chapter 2

1. These figures are based on unpublished estimates prepared by the Congressional Budget Office in February 1991. Estimates provided by the Office of the Actuary, Health Care Financing Administration, are similar.

2. In OBRA 1989 and OBRA 1990, disproportionate share payments were substantially increased beginning in April 1990. The estimates reported here incorporate these and other changes included in these acts.

3. The percentage changes discussed here are not estimates of changes in actual PPS payments. Per-case payment rates were simulated under the policies in effect during each of the first eight years of PPS, holding both case mix and volume constant. All changes were assumed to have been in effect for the entire fiscal year in which they were implemented. The precise effect of the combination of these and other simplifying assumptions has not been estimated, but it is unlikely to distort the general conclusions of the analysis.

4. While the average update factor for fiscal year 1990 was 6.0 percent (after January 1, 1990), this was offset by a 1.22 percent reduction in all DRG weights. Therefore, payment rates for this period increased by an average of 4.72 percent.

5. The Medicare Cost Report data presented in this report may differ from data in previous reports due to the availability of more current information and minor changes in editing procedures.

6. The Consolidated Omnibus Budget Reconciliation Act of 1985 changed the way hospitals were to be paid for the direct costs of graduate medical education programs from a cost basis to a hospital-specific prospective per resident payment. Although HCFA issued regulations to this effect in September 1989, the new payment rules have not been completely implemented. Meanwhile, hospitals have continued to receive payment of their reasonable costs. Hospitals will be responsible, however, for any overpayments they may have received since July 1985.

7. ProPAC analysis of Medicare Cost Report data, using a sample of 4,072 hospitals with admissions data in each of the first five years of PPS.

8. Center for Health Policy Studies, Georgetown University, *Hospital Cost Variations Under PPS,* ProPAC Extramural Technical Report No. E-90-09, September 1990.

9. ProPAC measured skill mix for 28 hospital labor categories, using category average salary levels (estimated primarily from Bureau of Labor Statistics survey data) to represent relative skill levels.

10. Data from the American Hospital Association National Hospital Panel Survey.

11. This was measured by comparing the increase in the economic indicator HCFA uses for each non-labor element in its hospital market basket with the increase in the Consumer Price Index published by the Department of Labor in the same year.

12. American Hospital Association, *Health Care Construction Report*, 33:1-12 (Chicago, IL: AHA 1989).

13. Judith Nemes, "In the Bond Insurance Game Some Hospitals Often Shut Out," *Modern Health Care* 20(51):42, December 24-31, 1990.

14. Finding based on an American Hospital Association analysis conducted under contract to ProPAC. The analysis is reported in *Comparative Analysis of Annual Survey and Medicare Cost Report Margin Data*, ProPAC Technical Report No. E-90-08, April 1990.

15. PPS winners and losers are defined as hospitals that were consistently in the top or bottom PPS margin quartile, respectively, for each of the third through fifth years of PPS. All other hospitals are in the middle group.

16. For this analysis, total winners and losers are those hospitals that were in the top or bottom quartile, respectively, based on their total margins from the third to the fifth year of PPS.

17. Deloitte & Touche and Health Care Investment Analysts, Inc., *The Sourcebook: The Comparative Performance of U.S. Hospitals, 1990 Edition*, (Chicago, IL: Deloitte & Touche; Baltimore, MD: Health Care Investment Analysts, Inc., 1990).

18. Prospective Payment Assessment Commission, *Hospital Closures, 1985–1988*, Intramural Technical Report No. I-91-01, January 1991.

Chapter 3

Hospital and Other Patient Care Services

Chapter 3

Hospital and Other Patient Care Services

The use of inpatient hospital and ambulatory services has changed markedly over the past decade. Growth in the number of specialty inpatient facilities has been accompanied by increased admissions to these units. In addition, hospitals are offering more services on an outpatient basis. These changes may result from the fact that hospitals face rising competition from other providers that are offering an array of services in ambulatory settings. The forces promoting the growth of other providers, such as payment system changes and evolving technology, show no signs of diminishing.

This chapter begins with a discussion of the use of hospital inpatient and outpatient services. Trends in admissions and length of stay are presented. The increase in hospital outpatient services is then examined. Medicare hospital outpatient service use and facilities that compete for outpatients are briefly described as well.

In the following section, other types of facilities providing services that might have been furnished during a hospital admission 10 years ago are discussed. These include skilled nursing facilities, swing beds, home health agencies, hospices, and specialty facilities excluded from PPS. The numbers of these facilities and the patients they serve are noted. A final section discusses the growth in the number of health care professionals and the areas in which they are working.

HOSPITAL SERVICES

Over time, hospitals change the mix of services they provide for a variety of reasons. Medical advances, along with attempts to control health care spending by Medicare and other third-party payers, are influencing both the types of services and the site of care. While payment reforms such as PPS and increased utilization review have played a role in changing the mix of output produced by hospitals, this trend was emerging before the enactment of PPS. Changing medical practice patterns, accompanied by patient acceptance of these innovations, facilitated the shift in site of care.

Hospital Inpatient Care

Use of hospital inpatient care has fallen substantially during the last decade. Community hospitals provide almost all of the short-term (general) acute inpatient care in the United States. In 1990, these hospitals had about 3.5 million fewer patient admissions than in 1979, a decline of almost 10 percent (see Table 3-1). Within this overall trend, however, changes in admission volume have varied greatly among age groups and among hospitals by location and size.

Admissions of people under the age of 65 peaked at 27 million in 1981. Since then, admissions for

Table 3-1. Change in Admissions to Community Hospitals, 1979-1990 (In Percent)

Year	All Admissions	Admissions by Age	
		Under 65	65 and Over
1980	2.9%	1.5%	6.7%
1981	0.9	0.0	3.0
1982	0.0	-1.6	4.1
1983	-0.5	-2.8	4.7
1984	-3.7	-4.2	-2.6
1985	-4.9	-4.7	-5.2
1986	-2.1	-2.5	-1.0
1987	-0.6	-1.0	0.4
1988	-0.4	-1.6	2.0
1989	-1.0	-2.0	1.2
1990	-0.5	-1.6	1.7
Cumulative change:			
1979-1983	3.2	-2.9	19.8
1983-1990	-12.4	-16.4	-3.7
1979-1990	-9.6	-18.8	15.4

SOURCE: American Hospital Association National Hospital Panel Survey.

this age group have fallen every year, reaching 21.6 million in 1990—a cumulative decline of almost 20 percent. By contrast, admissions of persons 65 or older increased about 20 percent from 1979 to 1983, the four years preceding PPS. Although admissions for this age group declined almost 9 percent in the next three years, they have been increasing slowly since 1986. Consequently, the volume of admissions for persons 65 or older remained about 15 percent higher in 1990 than in 1979. Thus, changes in the volume of inpatient admissions have been much greater among the population under 65 than among the elderly.

These trends are even more striking on a per capita basis. In 1980, there were 134 admissions per 1,000 persons under 65. The rate had fallen to 98 admissions per 1,000 by 1990, a cumulative decline of more than 26 percent. The admission rate for the elderly peaked at 431 admissions per thousand persons in 1983. Over the next four years the rate fell about 16 percent, reaching 363 per 1,000 in 1987, where it has remained.

Average length of stay was also decreasing slowly before the implementation of PPS (see Table 3-2). The introduction of PPS was accompanied by a brief acceleration of this trend, especially for elderly patients. However, length of stay has remained relatively stable for all groups of patients since 1985.

Trends in length of stay and admissions reflect a combination of changes in medical technology and changes in coverage and payment policies for inpatient care and for potential substitute services. PPS and changes in payment policies under private insurance programs, together with utilization review efforts, have created direct incentives for hospitals and physicians to shorten inpatient stays. At the same time, advances in medical technology have enhanced the variety and effectiveness of services that can be substituted for inpatient care. These medical advances have made it easier for physicians to discharge some patients earlier without sacrificing the quality of their care. In addition, many services, including diagnostic tests, can be performed before admission to the hospital.

Table 3-2. Length of Stay for Adult Patients, by Age, 1980-1990

Year	Length of Stay		Percent Change	
	All Adults	Adults 65 and Over	All Adults	Adults 65 and Over
1980	7.18	10.37	0.6%	-0.1%
1981	7.21	10.36	0.4	-0.1
1982	7.16	10.12	-0.7	-2.3
1983	7.02	9.68	-2.0	-4.4
1984	6.66	8.95	-5.1	-7.5
1985	6.55	8.76	-1.7	-2.1
1986	6.59	8.79	0.6	0.4
1987	6.64	8.88	0.8	1.0
1988	6.64	8.82	0.0	-0.7
1989	6.64	8.84	0.0	0.2
1990	6.57	8.71	-1.1	-1.5

SOURCE: American Hospital Association National Hospital Panel Survey.

Further, outpatient care can also be substituted for an inpatient stay for an expanding list of conditions. Most of the avoided admissions would have been for cases that had relatively short inpatient stays. Such substitution generally increases average length of stay since the remaining cases tend to be those with longer stays.

The current stability of average length of stay may indicate that unnecessary days have been eliminated or that opportunities for substituting outpatient care or other types of services for inpatient care have been exhausted. Alternatively, it may mean that continuing substitution has little or no overall effect on average length of stay.

These shifts in admissions and length of stay have led to dramatic changes in the utilization of inpatient care. However, the duration and the rate of the decline in admissions have differed greatly among groups of hospitals (see Table 3-3). The decline in admissions not only began earlier but also was steeper for rural than for urban hospitals. The 34.7 percent drop in admissions to rural hospitals during the decade was nearly 10 times larger than the 3.6 percent decline for urban hospitals. Therefore, rural hospitals, which had only a quarter of all admissions in 1979, accounted for more than three-quarters of the total decrease in admissions during the 1980s.

Available data also show that admission declines were consistently much greater than average for small hospitals, whether these hospitals were located in urban or rural areas. Admissions to hospitals with 100 or more beds dropped only about 8 percent, while admissions to hospitals with fewer than 100 beds decreased nearly 30 percent during

Table 3-3. Change in Total Admissions for Urban and Rural Community Hospitals, 1979-1989 (In Percent)

Year	Community Hospitals		
	All	Urban	Rural
1980	3.0%	2.9%	3.1%
1981	0.8	3.5	-7.4
1982	-0.2	0.1	-0.9
1983	-0.6	0.7	-5.2
1984	-2.8	-2.0	-5.3
1985	-4.9	-3.9	-8.4
1986	-3.2	-2.3	-6.8
1987	-2.4	-1.6	-5.7
1988	-0.5	-0.1	-2.0
1989	-1.1	-0.7	-2.7
Cumulative change:			
1979-1983	3.0	7.4	-10.3
1983-1989	-13.9	-10.2	-27.3
1979-1989	-11.3	-3.6	-34.7

SOURCE: ProPAC calculations based on unpublished data from the American Hospital Association Annual Survey.

the decade. Hospital Medicare Cost Report data for part of this period suggest that the size of the decline in admission volume was even greater for urban and rural hospitals with fewer than 50 beds.

Large declines in volume may have a severe impact on the financial viability of these hospitals. Ultimately, both access to care and the quality of care for local residents who find it difficult to travel elsewhere for hospital care may be jeopardized. (Issues and findings related to the impact of volume declines on the cost of care and hospital financial viability are addressed in Chapter 2, while issues related to access and quality are described in Chapter 4.)

Finally, declines in the volume of inpatient care in small urban and rural hospitals may reflect a shift in the site of care from these institutions to larger urban hospitals. If this is so, a continuation of these trends may increase the overall cost of inpatient care for the entire nation because larger urban hospitals tend to have higher costs per case than other hospitals.

Emerging Medical Technologies

Since the beginning of PPS, ProPAC has been examining the impact of prospective payment on the diffusion of new technologies in conjunction with estimating the appropriate increase in PPS payments. In 1989, hospitals continued to expand the availability of new technologies with large operating and capital costs. Cardiac catheterization, CT scanning, lithotripsy, MRI, open-heart surgery, and organ transplantation were offered by more hospitals in 1989 than before (see Table 3-4). This diffusion has continued despite the cost to acquire and operate these technologies. However, the types of hospitals offering these services vary. Larger hospitals are more likely to offer these services than smaller hospitals (see Table 3-5).

Since 1988, ProPAC has estimated the additional Medicare inpatient operating costs for selected individual technologies. Total projected fiscal year

Table 3-4. Community Hospitals Providing Selected Services, 1979-1989 (In Percent)

Year	Cardiac Catherization	CT Scan	Lithotripsy (ESWL)	MRI	Megavolt Radiation Therapy	Open-Heart Surgery	Organ/Tissue Transplant
1979	15.7%	17.5%	--	--	13.9%	10.4%	--
1980	16.4	22.6	--	--	16.3	10.7	--
1981	15.9	24.3	--	--	16.3	10.4	--
1982	16.7	31.3	--	--	16.7	11.1	4.0%
1983	17.1	39.3	--	--	16.5	11.4	4.3
1984	17.7	47.9	--	--	16.8	11.8	4.6
1985	18.4	55.5	--	--	17.2	12.2	4.9
1986	20.4	60.3	3.2%	9.5%	17.5	13.2	5.4
1987	22.0	60.4	3.7	9.3	17.7	14.2	5.8
1988	23.4	63.8	4.9	12.5	18.4	15.0	7.5
1989	24.7	66.9	6.3	15.0	19.0	15.7	9.5

Note: CT = computerized axial tomography, ESWL = extracorporeal shock wave lithotripsy, MRI = magnetic resonance imaging.

SOURCE: American Hospital Association, *Hospital Statistics*, 1980 through 1990 editions (Chicago, IL: AHA).

Table 3-5. Hospitals Providing Selected Services, by Hospital Size, 1989 (In Percent)

Hospital Size	Cardiac Catherization	CT Scan	Lithotripsy (ESWL)	MRI	Megavolt Radiation Therapy	Open-Heart Surgery	Organ/Tissue Transplant
All	24.7%	66.9%	6.3%	15.0%	19.0%	15.7%	9.5%
6-24 beds	0.8	3.8	0.4	0.4	0.0	0.0	0.8
25-49 beds	0.8	19.9	0.1	0.6	0.4	0.1	2.2
50-99 beds	1.6	46.0	0.7	1.8	1.2	0.1	1.6
100-199 beds	13.7	71.8	3.4	9.4	9.6	4.9	5.7
200-299 beds	42.6	85.7	7.7	21.5	26.3	21.5	9.7
300-399 beds	61.3	86.1	12.0	32.6	48.9	43.5	17.2
400-499 beds	69.8	86.7	15.3	37.9	59.3	53.6	21.8
500+ beds	67.8	74.9	24.6	43.4	59.7	58.8	36.0

Note: CT = computerized axial tomography, ESWL = extracorporeal shock wave lithotripsy, MRI = magnetic resonance imaging. The bedsize categories include all hospital-based facilities in the United States.

SOURCE: American Hospital Association, *Hospital Statistics*, 1990 edition (Chicago, IL: AHA).

1992 costs of $366 million represent about 0.7 percent of Medicare inpatient operating payments. The incremental costs for cases that would have been admitted even without the introduction of these technologies have consistently been less than 1 percent of Medicare inpatient operating expenditures. These estimates do not account for new admissions that would be generated because of the technologies or the costs associated with improving existing technologies. Cardiovascular technologies such as implantable defibrillators and imaging technologies like nonionic contrast agents are expected to have the largest impact on hospitals' Medicare costs in fiscal year 1992.[1]

Hospital Outpatient Services

Many technologies have contributed to the growth in ambulatory care, including MRIs, CT scanning, extracorporeal shock wave lithotripsy, outpatient intravenous therapy, and cardiac catheterization. Other advances, such as improvements in anesthesia and surgical techniques, have allowed procedures like cataract surgery and arthroscopy to be performed in ambulatory settings.

One way to assess the growth in hospital outpatient services is to examine the change in hospital revenues attributed to various sources. As noted in Chapter 2, outpatient revenues are becoming a larger share of total hospital revenue. Between 1980 and 1990, these revenues increased from 12.5 percent to 22.5 percent of total hospital revenue.

Outpatient revenue as a percent of total revenue varies by the size of the hospital. Compared with larger hospitals, smaller hospitals depend more on outpatient revenue. In 1984, for instance, outpatient revenues accounted for about 18.7 percent of total revenues for hospitals with six to 24 beds, while in 1990 they were 35.2 percent of total revenue. By comparison, outpatient revenues for hospitals with 500 or more beds were 12.2 percent of total revenues in 1984, increasing to 17.6 percent in 1990. Because smaller hospitals are located predominately in rural areas, outpatient revenues are a larger proportion of total revenues for rural hospitals than for urban hospitals.

The growth in outpatient revenues can be partially attributed to increased volume and the provision of more sophisticated and expensive services. Between 1979 and 1989, outpatient visits to hospitals grew over 44 percent, rising from 199 million to about 286 million. The increase in visits was 27.5 percent in rural areas and 48.3 percent in urban areas. Average outpatient revenue per visit during this same period grew nearly 289 percent, from $49 to $192. Even after adjusting for inflation in the general economy, this increase exceeded 200 percent.

Also contributing to the overall growth in outpatient visits is the growth in the number of outpatient surgical procedures in both urban and rural areas. For example, the total volume of surgical operations in hospitals rose 16.8 percent from

Table 3-6. Surgical Operations in Community Hospitals, 1979 and 1988-1989 (In Millions)

	Number of Surgeries			Percent Change 1979-1989	Percent Change 1988-1989
	1979	1988	1989		
Total	18.3	21.4	21.3	16.8%	-0.3%
Inpatient	15.7	11.4	11.0	-30.0	-3.5
Outpatient	2.6	10.0	10.4	304.0	3.2

SOURCE: American Hospital Association, *Hospital Statistics*, 1990-91 edition (Chicago, IL: AHA).

1979 to 1989. This trend has been accompanied by an extraordinary shift in the site of surgical care (see Table 3-6). Inpatient surgical operations declined 30 percent, while outpatient surgical operations increased 304 percent. In 1979, outpatient surgical procedures accounted for only 14 percent of total surgeries; by 1989, they had climbed to 49 percent of all surgeries.

Another important indicator of the growth in hospital outpatient services is the proportion of these services furnished by ancillary departments, which often provide care for inpatients and outpatients alike. Indeed, outpatient visits to ancillary departments have produced a large share of revenue in smaller hospitals.

Operating room revenues from outpatient visits are illustrative. Reflecting a shift in site of care, these revenues grew markedly for both small and large hospitals between 1983 and 1988. In hospitals with fewer than 50 beds, for example, operating room revenues from outpatient visits rose more than three times, from 12 percent of department revenues in 1983 to 42 percent in 1988. In hospitals with 400 or more beds, these revenues increased from 10 percent to 23 percent of department revenues during the same period.

Revenues associated with outpatient visits to radiology departments showed similar patterns. In smaller hospitals, these visits produced 70 percent of departmental revenue in 1988, while in larger hospitals they accounted for 44 percent of departmental revenue.

With the shift toward outpatient services as well as technological advances, hospitals are able to offer more types of ambulatory services to their patients (see Figure 3-1). For example, 32 percent of hospitals reported having an organized outpatient department in 1979, increasing to 81 percent by 1989. Nearly 67 percent of the growth occurred after the introduction of PPS. Other ambulatory services provided by hospitals include substance abuse, psychiatric, and rehabilitation treatment.

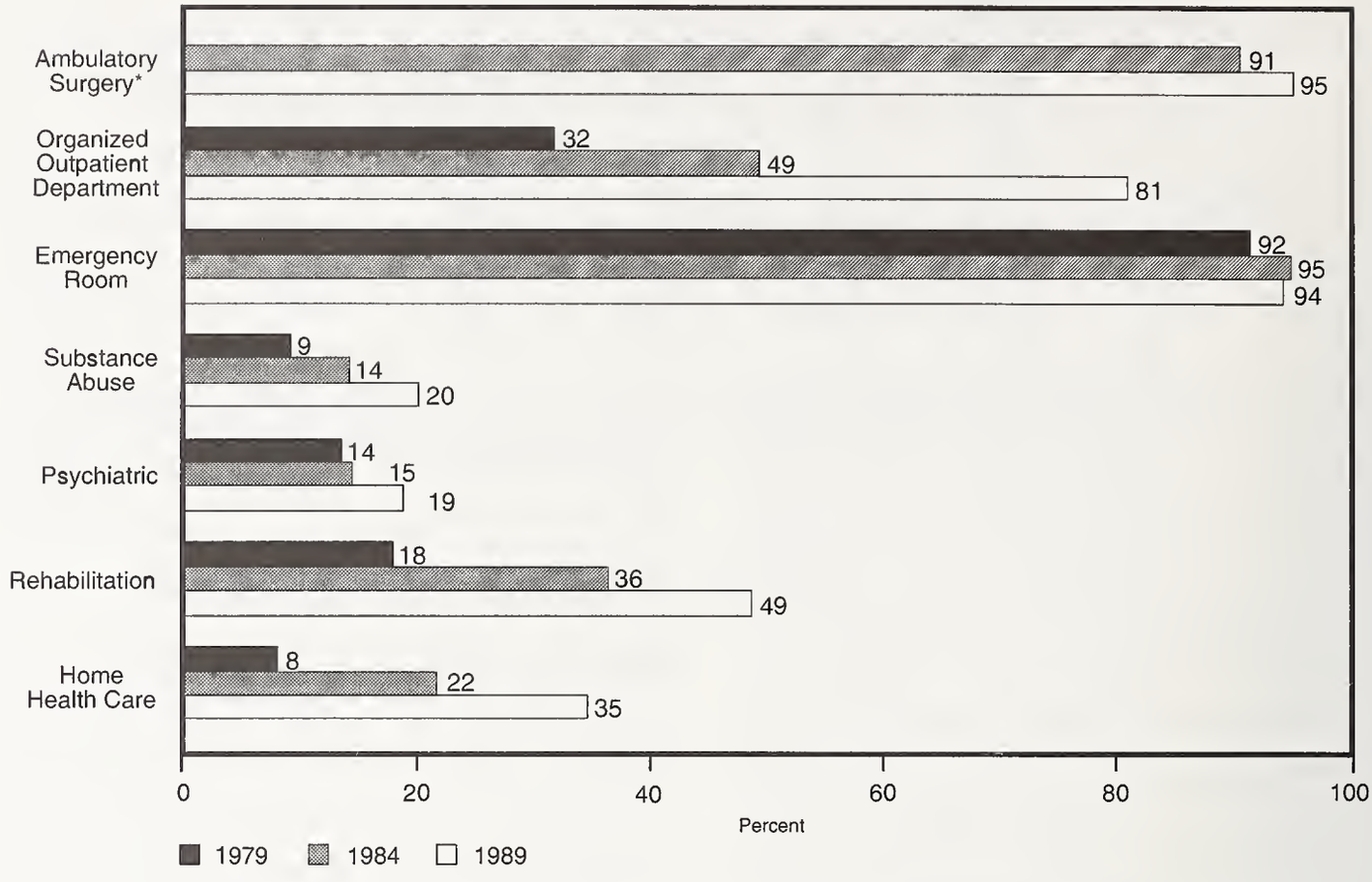
Medicare Hospital Outpatient Services

Many conditions bring Medicare patients to the hospital for outpatient treatment. The diagnosis codes most frequently entered on Medicare bills for outpatient services include diabetes and conditions related to the urinary and circulatory systems (see Table 3-7). Except for bills with a diagnosis code of chronic renal failure, average charges per bill in 1988 were less than $170; however, Medicare beneficiaries who use outpatient hospital services have, on average, more than three bills per year.[2]

Laboratory and radiology tests are the ancillary services most frequently provided on an outpatient basis by hospitals (see Table 3-8). Bills with laboratory charges only represented 30.6 percent of all outpatient bills in 1988, while another 14.5 percent had radiology charges only. Bills that include emergency room, clinic, or surgery visits make up less than one-third of the total, and most of these bills also contain charges for ancillary services. The most common laboratory and radiology tests as well as the most commonly performed procedures are presented in Table 3-9. Cataract removal with insertion of an intraocular lens is the outpatient surgical procedure with the greatest volume.

Beneficiaries who live in rural areas do not necessarily use rural hospitals for outpatient care, just as they do not necessarily use rural hospitals for inpatient care (see Chapter 4). While 94 percent

Figure 3-1. Community Hospitals Providing Selected Outpatient Services (In Percent)



* Not reported in 1979.

SOURCE: American Hospital Association, *Hospital Statistics* (Chicago, IL: American Hospital Association, 1980-1990 editions).

of outpatient hospital bills for urban beneficiaries are from urban hospitals, only 78 percent of the bills for rural beneficiaries are from rural hospitals. Rural beneficiaries are more likely to use urban hospitals for outpatient surgery than for laboratory or radiology services. Consequently, the mix of services provided by urban hospitals differs from the mix of services provided by rural hospitals. Although only 20 percent of outpatient surgery bills are from rural hospitals, these hospitals generate

Table 3-7. Most Frequently Occurring Diagnosis Codes on Outpatient Bills, 1988

Diagnosis Codes		Percent of Bills with the Code	Cumulative Percent	Median Total Charges
V726	Laboratory examination	4.5%	4.5%	$ 36
25000	Diabetes, uncomplicated adult	4.1	8.6	34
4019	Hypertension, NOS	4.1	12.7	65
585	Chronic renal failure	2.8	15.5	1,064
5990	Urinary tract infection, NOS	2.1	17.6	60
7890	Abdominal pain	1.9	19.5	169
4280	Congestive heart failure	1.8	21.3	80
4140	Coronary atherosclerosis	1.7	23.0	72
78650	Chest pain	1.6	24.6	154
2859	Anemia, NOS	1.6	26.2	83

Note: NOS = not otherwise specified

SOURCE: ProPAC analysis of the calendar year 1988 Medicare outpatient file.

Table 3-8. Most Frequently Occurring Types of Bills, 1988

Type of Bills	Percent of Total Bills	Total Charges (Median)
Laboratory	30.6%	$ 35
Radiology	14.5	113
Emergency room[a]	13.7	150
Clinic[b]	11.6	57
Surgery[c]	5.9	796
Other	3.7	125
Therapy	3.4	201
Medical	2.8	110
Radiology and laboratory	2.4	188
Dialysis	1.4	1,134
Supplies	1.3	38

[a] These bills have charges for the emergency room department; no charges are present in the clinic or surgery departments. These bills may or may not have charges for the remaining eight ancillary departments.

[b] These bills have charges for the clinic department; no charges are present in the emergency room or surgery departments. These bills may or may not have charges for the remaining eight ancillary departments.

[c] These bills have charges for the surgery department; no charges are present in the emergency room or clinic departments. These bills may or may not have charges for the remaining eight ancillary departments.

SOURCE: ProPAC analysis of the 1988 Medicare outpatient file.

26 percent of all radiology bills and 32 percent of all outpatient laboratory bills.

Facilities Competing with Hospitals for Outpatients

Federal and third-party payment policies have introduced financial incentives that not only reduced inpatient care but also encouraged the continued growth and diversification of ambulatory care facilities that directly compete with hospitals. The development of technologies and lack of payment constraints for non-inpatient care services have also been crucial to the proliferation of alternative sites of care. In addition, the same changes in consumer demand and physician practice patterns that contributed to the growth of ambulatory care delivery in hospitals has fostered the expansion of alternative sites of care.

A portion of the growth in both the number and utilization of ambulatory sites of care may also relate to the increasing numbers of physicians and

Table 3-9. Most Frequently Occurring HCPCS Codes, 1988

HCPCS Code(s)	Description	Percent of Bills with the Code(s)
Laboratory codes[a]		
85007 to 85028	Hemogram or complete blood count, manual or automated, with or without differential (manual or automated), with or without platelet count	22.5%
80002 to 80019	Automated multichannel chemistry 1 to 19 tests	20.0
81000, 81002, & 81015	Urinalysis routine, with or without microscopy	8.4
85610	Prothrombin time	5.5
82947	Glucose (except urine)	4.1
Radiology codes[a]		
71020	Radiologic exam, chest, (two views, frontal and lateral)	7.3
76091	Mammography (bilateral)	1.9
71010	Radiologic exam, chest (single view, frontal)	1.8
78306	Bone imaging (whole body)	0.7
74270	Radiologic exam, colon; barium enema	0.6
Procedure codes[b]		
66984	Extracapsular cataract removal with insertion of intraocular lens (one-stage procedure) manual or phacoemulsification technique	1.2
45378	Colonoscopy, fiberoptic, beyond splenic flexure (diagnostic procedure)	0.3
52000	Cystourethroscopy (separate procedure)	0.3
43235	Upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate (complex procedure)	0.3
66821	Discission of secondary membranous cataract and/or anterior hyaloid; laser surgery	0.2

Note: HCPCS = Health Care Financing Administration Common Procedure Coding System.

[a] Bills with service dates October 1, 1988 to March 31, 1989.

[b] Bills with service dates in calendar year 1988.

SOURCE: ProPAC analysis of calendar year 1988 Medicare outpatient file.

of group practices.[3] Physicians' offices are another site for a growing portion of outpatient care. In 1965, there were fewer than 300,000 physicians; by 1987, the number had grown to almost 590,000, an increase of 97 percent. The number of physicians per 100,000 population increased nearly 64 percent between 1960 and 1987, from 146 to 240.

Compared with physicians in solo practice, physicians in group practices are more likely to perform diagnostic procedures, particularly laboratory tests, in the office. Between 1975 and 1987, the number of medical group practices (defined as three or more physicians) more than doubled, from 8,483 to 17,496. About 30 percent of all non-Federal physicians practiced in groups during 1987.

Another ambulatory site of service providing competition for hospitals is the free-standing ambulatory surgical center. Although most ambulatory surgery is performed in the hospital outpatient setting, 1,244 Medicare participating ASCs were operating in 1990—more than two and one-half times the number in 1985. Advances in technology that encouraged the increased use of ASCs include less invasive alternatives to surgery, medications and drug therapies that improve recovery time and reduce the risk of infection, and advances in anesthesia.

In recent years, a large number of new ambulatory sites of care have emerged and been marketed by physicians, hospitals, for-profit entrepreneurs, and other entities (see Table 3-10). Diagnostic imaging centers are a case in point. The growth of these facilities has been dramatic since 1984, most likely in response to third-party reimbursement for diagnostic imaging services and rapid advances in imaging technologies. The most commonly performed procedures at these centers include X-ray, mammography, MRI, and CT scans.

Although most diagnostic imaging done on an outpatient basis occurs in the hospital outpatient setting, it was estimated that in 1990 more than 12 percent would be done in free-standing facilities.[4] Newer MRIs are being developed that are smaller and less expensive; this may hasten diffusion into the ambulatory setting. Additional improvements in digital image storage, scanning capability, and contrast agents will expand the number of applications for MRI and increase the number of procedures performed. Other imaging technologies, such as diagnostic ultrasound and mammography, are also expected to continue diffusing among ambulatory care providers.

Arthroscopy is an example of a technological advance that has grown rapidly in the ambulatory

Table 3-10. Types of Free-Standing Ambulatory Care Providers

Type of Provider	Major Services Offered
Ambulatory care centers	Primary urgent care, occupational medicine, diagnostic imaging, rehabilitation/sports medicine, psychiatric treatment, substance abuse treatment
Diagnostic imaging centers	X-ray, mammography, ultrasound, magnetic resonance imaging, computerized axial tomography scans
Cancer centers: comprehensive radiation oncology	Radiation therapy, chemotherapy, cancer screening and prevention, patient education, rehabilitation
Women's centers	Mammography, breast services, premenstrual syndrome care, diabetes care/education, Pap smear
Lithotripsy centers	Extracorporeal shock wage lithotripsy for kidney stone removal
Outpatient psychiatric clinics	Psychiatric treatment, medication monitoring, substance abuse treatment, suicide counseling
Pain clinics	X-ray, psychological testing, laboratory tests, physical exam, drug therapy, physical therapy

SOURCE: Project HOPE under contract to ProPAC.

setting. This procedure, commonly performed on the knee joint, involves inserting a small fibrotic device into a joint for diagnosis or treatment. Between 1979 and 1983, the number of arthroscopies performed doubled, and between 1983 and 1988, the number increased approximately 130 percent. One source recently estimated that about 600,000 arthroscopic procedures are being performed annually.[5] Much of the recent growth in the number of procedures has been in the outpatient setting, in both hospital outpatient settings and ASCs. In 1988, over 10 percent of all surgical procedures performed in ASCs were arthroscopies. Continued advances in the applications of arthroscopy suggest that further growth in volume can be expected.

POST-ACUTE AND LONG-TERM CARE SERVICES

Services provided in facilities other than the acute care hospitals are substituting for some inpatient care days. These services, which generally replace days at the end of an inpatient acute stay, are partially covered by Medicare. ProPAC is studying the relationship between acute care hospital length of stay and use of post-acute services for hip fracture patients. A technical report describing results of this work will be released in the fall.

Skilled Nursing Facilities

Extended care services, such as skilled nursing and rehabilitation services furnished to an inpatient at a skilled nursing facility, are partially covered under Medicare. A SNF may be either a separate institution or a part of the hospital (such as its swing-bed portion).

Medicare covers up to 100 days of extended care annually. The beneficiary pays no coinsurance for the first 20 days of SNF care, then pays a daily coinsurance equal to one-eighth of the hospital deductible ($78.50 in 1991) for days 21 through 100. Such services are covered if a patient has been in the hospital for at least three days and is transferred to a SNF within 30 days of discharge. If beneficiaries stay more than 100 days, they are responsible for payment, often spending down personal assets until qualifying for Medicaid coverage.

The use of SNF services is sensitive to Medicare coverage practices. Two major changes were made to the SNF program in 1988 and 1989 that dramatically affected Medicare utilization. In April 1988, the Health Care Financing Administration clarified the SNF eligibility requirements. This resulted in an expansion of Medicare SNF utilization: previously many beneficiaries did not apply or were not encouraged to apply for Medicare coverage for SNF care because of the possibility of retroactive denial. A second major change was the implementation of the Medicare Catastrophic Coverage Act of 1988. The act eliminated the three-day prior hospitalization rule and modified the coinsurance policy, resulting in greater utilization of the Medicare SNF benefit.

As a result of these two changes, 1989 Medicare-incurred expenditures were $3.8 billion, an increase of almost 300 percent over 1988. In 1990, expenditures declined to $2.5 billion because of the repeal of the MCCA in 1989. The number of beneficiaries served under the SNF program grew to 550,000 in 1989 and then declined 3.6 percent, to 530,000, in 1990; Medicare-covered SNF days rose to 33 million in 1989 and decreased 21.9 percent, to about 26 million, in 1990 (see Table 3-11).

Following repeal of the MCCA, both the three-day prior hospitalization rule and the coinsurance policy were reinstated in 1990. This resulted in the decline in utilization observed in 1990. However, the clarification of eligibility requirements in 1988 kept utilization and expenditures higher than pre-MCCA levels.

In addition to increasing utilization, the SNF program changes affected the number of nursing homes and nursing home beds that became Medicare-certified. Anticipating the effects of the MCCA and other legislation, large numbers of nursing homes obtained Medicare certification. The number of Medicare-certified SNFs increased 56 percent between 1983 and 1990, resulting in an increase in the supply of beds. In 1989, there were approximately 497,400 Medicare-certified SNF beds in 8,134 facilities.[6]

Swing Beds

The Medicare swing-bed program was designed to address the shortage of nursing home beds in rural areas and the low occupancy rates in rural hospitals. A swing-bed hospital is a small rural

Table 3-11. Medicare Beneficiary Skilled Nursing Facility Utilization, 1980-1990

Year	Covered Days (In Thousands)	Percent Change	Patients Served* (In Thousands)	Percent Change	Days Per Patient Served	Percent Change
1980	8,645	--	257	--	33.64	--
1981	8,518	-1.5%	251	-2.3%	33.94	0.9%
1982	8,814	3.5	252	0.4	34.98	3.1
1983	9,314	5.7	265	5.2	35.15	0.5
1984	9,644	3.5	299	12.8	32.25	- 8.2
1985	8,934	-7.4	314	5.0	28.45	-11.8
1986	8,156	-8.7	304	-3.2	26.83	- 5.7
1987	7,432	-8.9	293	-3.6	25.37	- 5.4
1988	11,478	54.4	350	19.5	32.79	29.2
1989	33,022	187.7	550	57.1	60.04	83.1
1990	25,795	-21.9	530	-3.6	48.67	-18.9

* These numbers are for fee-for-service only and may not include HMO enrollees.

SOURCE: Health Care Financing Administration, Office of the Actuary.

hospital that can use its beds interchangeably to furnish either acute care services or SNF-type services to Medicare beneficiaries. States also have the option of covering swing-bed services under their Medicaid programs.

One of the assumptions of the program is that an unmet demand for long-term care exists in many rural communities, especially for post-acute care that requires more intense medical and skilled nursing services than provided in typical rural nursing homes. Another assumption is that a number of underutilized rural hospitals have surplus staff. Using the resources of rural hospitals for long-term care and post-acute care can help preserve small community hospitals. This may also ensure continued availability of acute care and diversity of services, as well as maintain the economies of rural communities.[7]

The program began in 1982; currently 1,260 hospitals participate.[8] Medicare pays for approximately 50 percent of swing-bed care nationally. The average length of stay for swing-bed patients is between 12 and 20 days. Compared with patients in nursing homes, patients in swing-bed hospitals typically have more subacute problems.[9]

Home Health Care

Home health care is another Medicare benefit. To qualify for home health benefits, beneficiaries must be confined to their homes and need occasional skilled nursing care for an acute or post-acute condition. Covered home health services include part-time or intermittent nursing care; physical, occupational, and speech therapy; medical social services; part-time or intermittent services of a home health aide; medical supplies; and durable medical equipment. There is no time limit or prior hospitalization requirement for home care. However, program guidelines generally limit part-time or intermittent nursing care to five days per week for two to three weeks. There is no deductible or coinsurance charge for this care. Services must be provided by a Medicare-certified home health agency.

As a result of a recent court case, HCFA revised the eligibility and coverage manual and clarified the rules for interpreting part-time or intermittent care criteria. These changes became effective in July 1989, and have led to increased utilization and expenditures. This is because providers are less uncertain about retroactive denials of intermittent or part-time care.

According to HCFA, 1990 Medicare expenditures for home care totaled $3.7 billion, an increase of 24 percent since 1989. The number of visits received by Medicare beneficiaries also increased, to about 54.8 million in 1990 (see Table 3-12). In 1990, about 2.1 million patients were served, with an average of 26.5 visits per patient receiving home care. In September 1990, there were 5,721 Medicare-certified home health agencies offering services.[10]

Table 3-12. Home Health Care Utilization, 1980-1990

Year	Visits (In Thousands)	Percent Change	Patients Served* (In Thousands)	Percent Change	Visits Per Patient Served	Percent Change
1980	16,322	--	726	--	22.48	--
1981	22,688	39.0%	948	30.6%	23.93	6.5%
1982	30,628	35.0	1,154	21.7	26.54	10.9
1983	36,898	20.5	1,318	14.2	28.00	5.5
1984	40,434	9.6	1,498	13.7	26.99	-3.6
1985	39,441	-2.5	1,549	3.4	25.46	-5.7
1986	37,985	-3.7	1,571	1.4	24.18	-5.0
1987	35,629	-6.2	1,544	-1.7	23.08	-4.5
1988	36,992	3.8	1,460	-5.4	25.33	9.7
1989	46,711	26.3	1,661	13.8	28.12	9.9
1990	54,811	17.3	2,065	24.3	26.54	-5.6

* These numbers are for fee-for-service only and may not include HMO enrollees.

SOURCE: Health Care Financing Administration, Office of the Actuary.

Hospice Care

Terminally ill Medicare beneficiaries whose life expectancy is six months or less are eligible to receive hospice benefits. Hospice care provided to dying persons and their families is supportive rather than cure-oriented. Once a beneficiary chooses to receive the hospice benefit, he or she must waive rights to all other Medicare benefits. Coverage is initially limited to 210 days, but beneficiaries can receive additional 90-day periods of coverage if they are recertified as terminally ill.

Hospice benefits include nursing care, various therapies, medical social services, homemaker-home health aide services, medical supplies and appliances, physicians' services, short-term inpatient care, respite care, and patient counseling. The number of Medicare-certified hospice providers has climbed from 108 in 1984 when the benefit was added to 934 in 1990.[11] Medicare expenditures for the hospice benefit have also grown rapidly, to $3.7 million in 1990, an increase of 24 percent over 1989.

PPS-EXCLUDED HOSPITALS AND DISTINCT-PART UNITS

Because of the incentives of PPS, it is likely that there is a relationship between declining inpatient care in short-stay general acute care hospitals and increases in the number of patients admitted to specialty hospitals. Rehabilitation and psychiatric hospitals and distinct-part units, as well as children's, long-term, and cancer hospitals, have been excluded from PPS since its implementation. PPS-excluded providers are paid on the basis of each facility's historical costs trended forward, with a limit placed on the rate of increase in per case reimbursable costs. These "target rate of increase" limits, established by TEFRA, are updated annually. The target rate per discharge is based on hospital-specific Medicare costs in a base year, which varies depending on when the facility was constructed or converted to a PPS-excluded category. In some instances, it can take up to three years for a provider's target rate to be established after the provider is excluded.

Growth in the Number and Utilization of PPS-Excluded Facilities

The number of PPS-excluded facilities has grown since 1984, but patterns have not been uniform across types of excluded providers (see Table 3-13). Rehabilitation facilities experienced the most rapid growth between 1984 and 1990. During this period, the number of rehabilitation hospitals increased 173 percent, while distinct-part units increased 120 percent. Psychiatric facilities, which represent the majority of PPS-excluded facilities, have experienced the second largest growth; psychiatric hospitals increased 57 percent, to 691 in 1990, while distinct-part units have increased 56 percent between 1984 and 1990.

Medicare discharges from PPS-excluded facilities rose steadily from 1984 to 1988. The majority of Medicare discharges from PPS-excluded facilities in 1988 were from psychiatric facilities (63 percent of total discharges). Rehabilitation facilities

Table 3-13. PPS-Excluded Hospitals and Distinct-Part Units, 1984-1990

Type of Facility	Year*							Percent Increase 1984-1989
	1984	1985	1986	1987	1988	1989	1990	
Hospitals								
Psychiatric	439	481	515	578	608	650	691	57%
Rehabilitation	49	68	79	84	100	120	134	173
Long-term	84	86	92	87	87	88	90	7
Children's	47	53	55	60	58	59	65	38
Cancer	--	--	--	8	8	8	8	0
Total	619	688	741	817	861	925	988	60
Distinct-part units								
Psychiatric	722	762	906	950	1,051	1,104	1,129	56
Rehabilitation	308	386	473	535	565	628	678	120
Total	1,030	1,148	1,379	1,485	1,616	1,732	1,807	75

*Numbers were determined as of September of each year except 1990, which was as of December 17, 1990.

SOURCE: Health Care Financing Administration, Health Standards and Quality Bureau.

treated about 33 percent of Medicare discharges from excluded facilities, and the remaining were treated at long-term, children's, and cancer hospitals. Most beneficiaries receiving services in PPS-excluded facilities were treated in distinct-part units, which experienced the fastest rate of growth during the period (see Table 3-14). For example, by 1988, nearly 66 percent of Medicare discharges from rehabilitation providers were from distinct-part units; about 70 percent of Medicare discharges from psychiatric providers were from distinct-part units.

Patient Characteristics

About 10 diagnoses account for almost half of Medicare admissions in rehabilitation hospitals. Stroke-related conditions, such as hemiplegia and cerebral vascular accident, account for about 23 percent of these patients. In addition, patients with orthopedic problems, such as a broken hip, account for about 20 percent of admissions. Due to coding limitations, an accurate distribution of diagnoses in distinct-part rehabilitation units was not available.

Table 3-14. Medicare Discharges from PPS-Excluded Hospitals and Distinct-Part Units, 1985-1988

Type of Facility	1985	1986	1987	1988	Percent Change 1985-1988
Psychiatric					
Hospitals	71,456	75,059	69,837	76,612	7.2%
Units	93,120	120,739	131,217	148,501	59.5
Total	164,576	195,798	201,054	225,113	36.8
Rehabilitation					
Hospitals	25,429	27,401	31,413	35,567	39.9
Units	45,650	57,566	68,813	82,723	81.2
Total	71,079	84,967	100,226	118,290	66.4
Long-term	14,477	14,666	13,712	14,304	-1.2
Children's	1,690	2,141	2,298	2,281	35.0

Note: These figures understate the actual number of Medicare discharges due to incomplete cost reports.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

The majority of patients in all diagnoses were 65 to 75 years old. Between 1985 and 1988, there was a slight increase in older patients in the distinct-part units and a slight decrease in patients under 75 in hospitals.

The distribution of diagnoses in psychiatric distinct-part units differed from that in hospitals. Depression-related diagnoses represented a greater proportion of admissions to distinct-part units while schizophrenic-related diagnoses accounted for more admissions to hospitals.

Median Margins for PPS-Excluded Facilities

In the fifth year of PPS, more than half of all PPS-excluded providers had TEFRA inpatient margins below zero. Providers that were excluded from PPS during the early years of the program appear to be more financially vulnerable than those excluded in later years (see Table 3-15).

Several factors contribute to the financial performance of providers excluded in the early years of PPS. First, between fiscal years 1984 and 1988, PPS-excluded providers received the same update as PPS hospitals. The PPS update was constrained due to rapid growth in payments resulting from case-mix index change. During this period, for example, the cumulative market basket increase was 22 percent. However, PPS payments rose nearly 47 percent due to CMI change. Because PPS-excluded providers did not receive payments for changes in case mix, they did not benefit from CMI increases and yet received the same constrained update. Second, the severity of patients treated by PPS-excluded providers may have changed. More severely ill patients may result in increased costs, but this was not accounted for in the TEFRA payment system.

Table 3-15. Median TEFRA Inpatient Margins for PPS-Excluded Providers in the Fifth Year of PPS

Type of Provider	Rehabilitation	Psychiatric
Hospitals		
All	-0.6%	-8.0%
Consistent group		
Fiscal year 1985	-1.9	-16.0
Fiscal year 1986	0.1	-10.0
Fiscal year 1987	5.7	-1.8
Fiscal year 1988	-0.3	0.0
Distinct-part units		
All	-5.5	-8.9
Consistent group		
Fiscal year 1985	-10.3	-13.2
Fiscal year 1986	-11.9	-15.6
Fiscal year 1987	0.0	-4.5
Fiscal year 1988	0.4	0.0

Note: The "All" group includes all reporting providers in the fifth year of PPS. The "Consistent group" contains providers first identified in the database as excluded in that fiscal year. Each group is mutually exclusive; that is, providers in the fiscal year 1985 group are excluded from other groups. The number of providers in each group varies.

SOURCE: ProPAC estimates using Medicare Cost Report data from the Health Care Financing Administration.

To examine the effect of year of program entry, the Commission conducted two analyses. These studies compared all providers reporting in each year with selected cohorts of providers based on when their Medicare Cost Report data became available.[12]

In the fifth year of PPS, the median inpatient TEFRA margin for all rehabilitation hospitals was -0.6 percent. However, hospitals in the fiscal year 1985 cohort had a median margin of -1.9 percent by the fifth year compared with -0.3 percent for those in the fiscal year 1988 cohort. Further, distinct-part rehabilitation units had a median TEFRA margin of -5.5 percent in the fifth year of PPS. However, distinct-part rehabilitation units in the fiscal year 1985 cohort had a median margin of -10.3 percent compared with 0.4 for those in the fiscal year 1988 cohort.

The same pattern exists for psychiatric providers as well. In PPS 5, the median TEFRA margin for all psychiatric hospitals was -8.0 percent. However, psychiatric hospitals in the fiscal year 1985 cohort had median margins in PPS 5 of -16.0 percent compared with 0.0 percent for those in the fiscal year 1988 cohort. Distinct-part psychiatric units in early cohorts had lower median margins than those identified in later cohorts.

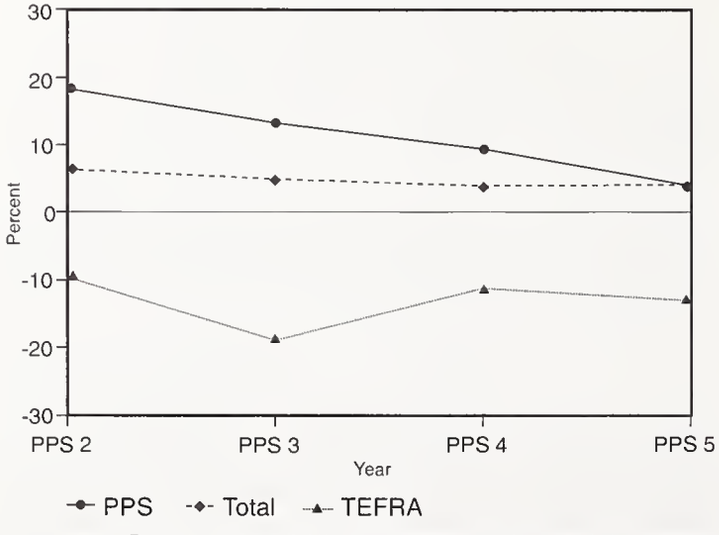
Thus, certain PPS-excluded facilities have become financially vulnerable. It is important to note, however, that while distinct-part units had negative TEFRA margins in the fifth year of PPS, the PPS hospitals with which they were affiliated tended to have both positive PPS and total margins. This could be the result of shorter length of stay in the PPS hospitals that shift patients and, therefore,

costs to the hospital's distinct-part unit. Costs can also be shifted to the distinct-part units through accounting mechanisms without changes in patient care patterns.

In PPS 5, 51 percent of distinct-part rehabilitation units had negative TEFRA margins. However, PPS hospitals with distinct-part rehabilitation units had positive aggregate PPS and total hospital margins (see Figure 3-2). In the fifth year of PPS for example, the aggregate TEFRA margin in the distinct-part rehabilitation units was -13.0 percent. By contrast, the aggregate PPS inpatient margin was 4.0 percent and the total hospital margin, 4.1 percent in hospitals with a rehabilitation unit. This compares with the aggregate PPS margin for all hospitals, which was 2.0 percent, and the total margin, which was 3.8 percent in PPS 5.

In PPS 5, almost 70 percent of all distinct-part psychiatric units had negative TEFRA margins. However, PPS hospitals with distinct-part psychiatric units had positive inpatient PPS and total hospital margins (see Figure 3-3). The aggregate TEFRA margin in the fifth year of PPS was -23.6 percent; however, the PPS margin was 4.8 percent and the total hospital margin, 3.7 percent.

Figure 3-2. Aggregate Margins for PPS Hospitals with Distinct-Part Rehabilitation Units, Second to Fifth Year of PPS (In Percent)

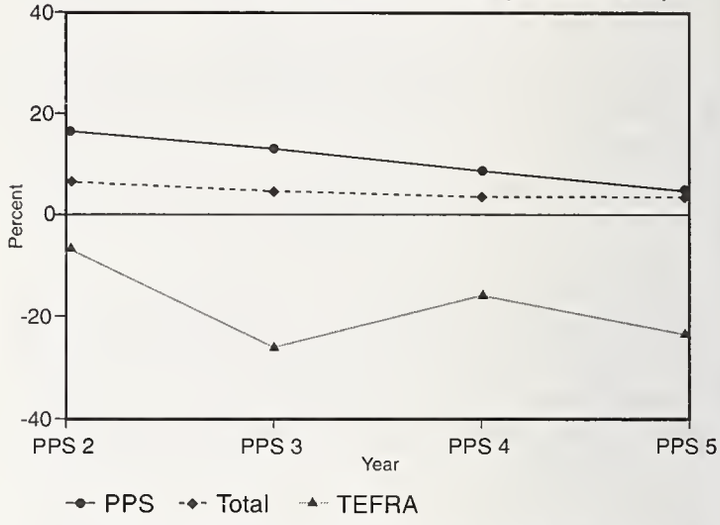


Note: Data for each PPS year correspond to each hospital's cost reporting period beginning in that year. For instance, the PPS 2 year includes data from each hospital's cost report beginning during Federal fiscal year 1985.

SOURCE: ProPAC estimates using Medicare Cost Report data from the Health Care Financing Administration.

Most of these hospitals with distinct-part units are located in urban areas and have teaching programs. Ninety-one percent of PPS hospitals with distinct-part rehabilitation units are located in urban areas, and nearly 60 percent of these are in hospitals with teaching programs. Nearly 82 percent of distinct-part psychiatric units are located in urban PPS hospitals, of which nearly 51 percent also have teaching programs.

Figure 3-3. Aggregate Margins for PPS Hospitals with Distinct-Part Psychiatric Units, Second to Fifth Year of PPS (In Percent)



Note: Data for each PPS year correspond to each hospital's cost reporting period beginning in that year. For instance, the PPS 2 year includes data from each hospital's cost report beginning during Federal fiscal year 1985.

SOURCE: ProPAC estimates using Medicare Cost Report data from the Health Care Financing Administration.

NON-PHYSICIAN PROVIDERS

The number of non-physician providers practicing in the United States has increased significantly in the past decade. Among these providers are certified nurse-midwives (CNMs), physician assistants (PAs), clinical psychologists (CPs), clinical social workers (CSWs), certified registered nurse anesthetists (CRNAs), and nurse practitioners (NPs). ProPAC was asked to examine the use of non-physicians in health care settings other than acute and long-term care facilities.

The 4,200 nurse-midwives certified by the American College of Nurse-Midwives in 1990 was up from a 1982 level of 2,550—an increase of 67 percent.[13] The 20,000 licensed PAs in 1987 represented a 15 percent increase over 1985.[14] And

Table 3-16. Non-Physician Hospital-Based Full-Time Equivalents, 1982-1989

Year	Nurse Practitioners	Physician Assistants	Psychologists	Medical Social Workers
1982	3,032	2,254	--	22,387
1983	3,270	2,599	--	22,546
1984	3,382	3,155	4,804	23,183
1985	4,026	2,398	5,592	23,785
1986	4,970	2,725	6,322	24,473
1987	4,537	3,184	6,792	27,417
1988	4,347	3,243	6,957	29,277
1989	5,189	3,503	7,135	30,421

SOURCE: American Hospital Association Annual Survey.

while there were only 14,000 practicing CRNAs in 1970, by 1984 this number had grown to 19,500 and, by 1988, to 22,400.[15,16]

Clinical psychologists and clinical social workers have grown in number as well. In 1985, there were some 46,000 licensed CPs—twice as many as a decade earlier.[17] As reflected by membership in their professional organization, clinical social workers have grown as a group by 5 percent a year since 1979. (These members represent 70 percent of social workers with advanced degrees.) In 1990, more than 115,000 social workers prepared at the master's or doctoral levels were practicing in this country.[18]

Hospitals are not the primary practice setting for most of these non-physician health care providers. About 33 percent of nurse practitioners, for instance, work in ambulatory care settings; 30 percent practice in community and public health settings, and 27 percent in hospitals.[19]

The number of NP, PA, CP and MSW full-time equivalents practicing in hospitals, on the other hand, has slightly increased over time (see Table 3-16). As for non-physicians in rural hospital settings, the number has remained fairly stable between 1984 and 1989 (see Table 3-17). Roughly 13 percent of all clinical psychologists and 13 percent of all medical social workers based in hospitals work in rural areas. The distribution of nurse practitioners and physician assistants in rural hospitals was about 8 percent and 11 percent, respectively.

Non-physicians can improve access to health care. In 1982, for example, CRNAs administered nearly 70 percent of all anesthetics given in the United States; 34 percent of all hospitals relied solely on CRNAs, and 85 percent of these hospitals were located in rural areas.[20] While many counties lack psychiatrists, in 1987 20 percent reportedly had psychologists.[21]

Even though the numbers of non-physician providers are growing, the share of some types of non-physicians practicing in rural areas has been declining. Of the NPs employed in 1988, approximately 15.8 percent were in rural areas, down from 18 percent in 1984.[22] In 1981, 27 percent of all practicing PAs were in communities with fewer than 10,000 residents; by 1989, only 20 percent were practicing in communities of this size.[23] The number of practicing CNMs has also decreased in rural areas. The proportion of CNMs practicing in communities of fewer than 50,000 residents fell by more than 10 percentage points between 1982 and 1987.[24]

Table 3-17. Non-Physician Hospital-Based Full-Time Equivalents, 1984-1989 (In Percent)

	Nurse Practitioners		Physician Assistants		Psychologists		Medical Social Workers	
Year	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1984	7%	93%	9%	91%	14%	86%	13%	87%
1985	12	88	10	90	12	88	13	87
1986	7	93	10	90	13	87	12	88
1987	7	93	11	89	13	87	13	87
1988	8	92	12	88	13	87	12	88
1989	9	91	10	90	12	88	12	88

SOURCE: American Hospital Association Annual Survey.

In addition, some rural areas have experienced shortages in primary care physicians. Since higher proportions of the elderly population live in rural areas, they may be particularly affected by this.[25] A partial solution to the primary care physician shortage may include increasing the use of non-physicians.

CONCLUSIONS

The mix of output produced by hospitals has changed substantially in the past decade, 1979 to 1989. Trends in inpatient utilization reflect changes in medical technology as well as in coverage and payment policies. These and other factors have created direct incentives for hospitals and physicians to shorten or eliminate inpatient stays. While inpatient utilization declined nearly 11.3 percent during this period, outpatient visits grew nearly 44 percent. A major factor related to this growth in outpatient utilization has been the dramatic shift in site of hospital surgeries from the inpatient to the outpatient setting. In 1989, 48.5 percent of all hospitals surgeries were performed in the outpatient setting, although this varied across hospital groups.

Outpatient revenues have become an increasingly larger share of total hospital revenues. The growth has been most evident in small and rural hospitals. One explanation for this phenomenon is related to the types of surgeries and services performed in smaller hospitals. These hospitals tend to perform less complex surgeries and other procedures that are more likely to have shifted to the outpatient setting. This results in a decrease in the proportion of revenues from inpatient services.

The development of new technologies and minimal payment constraints have resulted in the proliferation of alternative sites of care, such as diagnostic imaging and ambulatory care centers. The number of Medicare-participating ASCs, for instance, increased nearly 250 percent between 1985 and 1990.

In addition, facilities other than the acute care hospital—among them SNFs, HHAs, and hospices—are providing services that may substitute for a portion of the inpatient stay. While Medicare utilization of SNF facilities declined following the repeal of MCCA in 1989, it is still higher than pre-MCCA levels. Recent coverage clarifications issued by the Secretary of Health and Human Services for both SNF and HHA services have prompted increased use of these services by Medicare beneficiaries. Growing availability and acceptance of hospice care has stimulated use of this benefit since it became a covered service in 1984.

Declining utilization of general acute care hospitals may also be related to the availability of specialty hospitals. Beneficiary utilization of PPS-excluded facilities continues to grow. However, many of these providers are facing increased financial pressures due partly to earlier constraints on payment increases. In addition, it is noteworthy that while distinct-part units had negative TEFRA margins, the PPS hospitals with which they were affiliated had both positive PPS and total hospital margins. The Commission will continue to examine the effects of TEFRA on excluded providers. Its findings and recommendations will be contained in its June 1992 report to Congress.

Finally, the number of non-physician providers has increased dramatically. Many of these providers are practicing outside of the hospital setting. However, in rural areas, the share of certain non-physicians has declined. This trend is compounded by the shortages of primary care physicians in certain rural areas. ProPAC will continue to monitor the use of non-physician providers, their impact on access to care, and their use as alternatives to physician and hospital care.

Notes to Chapter 3

1. Project HOPE, *Estimating the Contribution of Scientific and Technological Advancement to Medicare Inpatient Operating Costs for Fiscal Year 1992, Final Report*, prepared under ProPAC contract T-47540329, January 25, 1991.

2. Medicare outpatient data are based on submitted hospital bills rather than visits. In most cases, there is only one bill per day per beneficiary; however, about 7 percent of bills represent multiples for individual beneficiaries with the same dates.

3. Data on physicians are from Pam Polister and Evelyn Cunico, eds., *Socio-Economic Factbook for Surgery 1989* (Chicago, IL: American College of Surgery).

4. *Biomedical Business International* (Tustin, CA: Biomedical Business International, September 30, 1986) 185.

5. "Orthopedics and Rehabilitative Services," *Meditrends* (Chicago, IL: AHA, June 1989) 64-8.

6. Melvin Gent, Health Care Financing Administration, Bureau of Data Management and Strategy, Washington, DC, personal communication, April 3, 1991.

7. *Hospital Swing Beds: A Study of Long-Term Care Provided in Acute Care Beds in Rural America, 1982-1986, Volume 1: Summary Report*, (Denver, CO: Center for Health Services Research, University of Colorado Health Sciences Center, May 1989).

8. Michael Berain, Health Care Financing Administration, Health Standards and Quality Bureau, Washington, DC, personal communication, April 3, 1991.

9. Herbert A. Silverman, "Swing-bed services under the Medicare program, 1984-87," *Health Care Financing Review* 11(3):99-106, Spring 1990.

10. Shelah Leader, "Medicare's Home Health Benefit: Eligibility, Utilization, and Expenditures," issue brief, Washington, DC, American Association of Retired Persons, January 1990.

11. Berain, personal communication, April 3, 1991.

12. First, all providers' reports in each of the first five years of PPS were examined. Second, cohorts of providers were grouped by fiscal year. Each cohort was mutually exclusive: for example, providers in the fiscal year 1985 cohort were excluded from other cohorts. Consequently, the numbers of providers in each year vary. Further, providers excluded from PPS whose target rates have not yet been established were removed.

13. U.S. Congress, Office of Technology Assessment, *Health Care in Rural America*, OTA-H-434 (Washington, DC: U.S. Government Printing Office, September 1990) 256.

14. Ibid., 252.

15. "AANA Membership Survey Results-Fiscal Year 1984," *Journal of the American Association of Nurse Anesthetists* 52(1):33-40, February 1984.

16. Office of Technology Assessment, *Health Care in Rural America*, 257.

17. U.S. Department of Health and Human Services, Public Health Service, National Institute of Mental Health, *Mental Health, United States 1990*, DHHS Pub. No. (ADM)90-1708 (Washington, DC: U.S. Government Printing Office, 1990) 199.

18. Ibid., 201.

19. Office of Technology Assessment, *Health Care in Rural America*, 251.

20. Office of Technology Assessment, *Health Care in Rural America*, 257.

21. *Distribution of Psychologists and Psychiatrists by County*, prepared for the American Psychological Association by Applied Management Sciences, Inc., Silver Spring, MD, October 2, 1987.

22. Office of Technology Assessment, *Health Care in Rural America*, 252.

23. Ibid., 254.

24. Ibid., 256.

25. U.S. Department of Health and Human Services, Public Health Service, Office of Rural Health Policy, *National Advisory Committee on Rural Health, Third Annual Report to the Secretary of Health and Human Services*, December 1990, 6.

Chapter 4

Issues Affecting Medicare Beneficiaries

Chapter 4

Issues Affecting Medicare Beneficiaries

Efforts to contain the growth of health care spending ideally should focus on improving the overall efficiency of the health care system. However, even the most carefully designed measures to reduce inefficiency may have unintended effects on Medicare beneficiaries. Cost containment initiatives may result in declining access to or use of needed services.

This chapter examines three issues—financial responsibility, access to medical care, and quality of care—from the perspective of the Medicare beneficiary. It briefly describes trends in Medicare enrollment; use of Medicare services and expenditures; and trends in Medicare beneficiaries' payment for Medicare services, called beneficiary liability.

Most beneficiaries have supplemental insurance that helps to pay for the portion of the bill that Medicare does not cover. In this chapter, the types of supplemental insurance held by beneficiaries are described. Issues affecting businesses are discussed, such as the new Financial Accounting Standards Board requirement that employers recognize the expected cost of retiree health benefits during the employee's working years. This requirement is likely to place a significant financial burden on some businesses, which may respond by reducing benefits to their employees. The next section discusses long-term care insurance, which now covers a small percentage of long-term care costs but is becoming increasingly important.

The chapter continues with a discussion of the impact of PPS on beneficiaries' access to care. Both utilization rates and supply of services are used as proxies for access to care. Beneficiary groups whose utilization rates are significantly lower than other beneficiaries may not have access to the services they need. Alternatively, beneficiaries may be forced to travel a much longer distance to reach the nearest health care facility when their local hospital closes, which could in turn affect their use of services.

Research findings are presented concerning access by rural beneficiaries. None of this research found evidence that rural beneficiaries experience impaired access, even when the only hospital in their county closed.

The chapter ends with a discussion of issues related to the quality of care received by Medicare beneficiaries. RAND's study (sponsored by HCFA) on the effect of PPS on quality of care is discussed, as well as proposed changes in Peer Review Organization methodology.

THE MEDICARE PROGRAM

Medicare eligibility for Hospital Insurance (HI or Part A) is based on age or disability status; people over 65 and entitled to cash benefits under Social Security are automatically eligible for Part A. After a 29-month waiting period, those under 65 with a permanent disability are also eligible. The small number of the elderly who are not eligible for Part A may purchase coverage at the full actuarial cost. Supplementary Medical Insurance coverage (SMI or Part B) is a voluntary program for the elderly for which enrollees pay a monthly premium of $29.90. People who have end-stage renal disease (ESRD, or irreversible kidney failure) are eligible for Part A and Part B coverage, typically after a three-month waiting period.

Medicare-covered services under Part A include inpatient hospital care, home health agency care, hospice care, and limited skilled nursing facility care. Medicare Part B primarily covers a portion of the cost of physician services, medical supplies, and outpatient hospital treatment.

Table 4-1. Trends in Medicare Enrollment, 1966-1991 (In Millions)

Year[a]	Number of People		
	Total	Aged	Disabled
1966	19.1	19.1	--
1970	20.5	20.5	--
1975	25.0	22.8	2.2
1980	28.5	25.5	3.0
1985	31.1	28.2	2.9
1986	31.7	28.8	3.0
1987	32.4	29.4	3.0
1988	33.0	29.9	3.1
1989	33.6	30.4	3.2
1990[b]	34.3	31.1	3.2
1991[b]	35.4	32.1	3.3

[a]As of July of the specified year.

[b]Estimated.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy, and the Office of the Actuary.

Enrollment and Utilization

In 1989, 33.6 million Medicare beneficiaries were enrolled in Part A, Part B, or both (see Table 4-1). This constitutes a 72 percent increase from 1967. In 1967, the first full year of the program, Medicare enrollees represented 9.7 percent of the U.S. resident population; in 1990, they represented 13.5 percent. About 9 percent of enrollees are disabled; the remainder are elderly.

Enrollment in Part A was 33 million in 1989, while enrollment in Part B was 32.1 million. Only 500,000 enrollees (1 percent) had Part B coverage without also having Part A. One hundred and fifty-five thousand people were covered under the end-stage renal disease program, compared with 67,000 in 1980, an increase of 124 percent.

After the implementation of PPS in 1984, utilization declined for inpatient hospital services, but this rate seems to have stabilized (see Table 4-2). A greater proportion of beneficiaries received SNF services in 1988 than in previous years. This was primarily due to clarification of eligibility requirements for Medicare SNF care, which enabled fiscal intermediaries to approve SNF care that previously would have been disapproved. The Omnibus Budget Reconcilation Act of 1987 also increased certification requirements for all nursing homes, and required intermediate care facilities (ICFs) to meet the same certification requirements

Table 4-2. Aged and Disabled Persons Served by Medicare, 1980-1988 (Per 1,000 Enrollees)

Type of Coverage/Provider	Persons Served					Average Annual Percent Change
	1980	1982	1984	1986	1988	1980-1988
Total	633.2	638.2	681.3	726.9	761.7	2.3%
Hospital Insurance (Part A)	240.6	251.4	239.9	211.0	207.6	-1.9
Inpatient hospital	237.1	243.5	229.0	203.2	197.5	-2.3
All elderly	237.1	242.7	228.5	201.6	197.1	-2.3
All disabled	243.3	250.1	233.7	217.9	201.6	-2.4
Skilled nursing facility	9.2	8.7	10.0	9.7	11.9	3.3
All elderly	9.9	9.3	10.7	10.4	12.7	4.7
All disabled	2.9	2.6	3.1	3.5	4.2	4.7
Home health agency	25.9	39.7	49.9	50.3	48.8	8.2
All elderly	26.9	41.1	51.6	52.0	50.7	8.2
All disabled	17.3	27.1	34.6	34.6	31.1	7.6
Supplementary Medical Insurance (Part B)	650.5	653.5	697.5	748.9	789.6	2.5
Physician	629.9	696.1	674.8	725.9	768.7	2.5
All elderly	633.2	635.9	677.3	729.2	773.8	2.5
All disabled	599.9	617.8	649.3	692.4	719.5	2.3
Outpatient	275.1	297.3	332.2	399.6	447.6	6.3
All elderly	268.6	290.4	326.7	395.2	444.6	6.5
All disabled	334.4	362.9	387.9	444.1	478.2	4.6

Note: The rate of persons served is per 1,000 enrolled. All disabled includes beneficiaries with end-stage renal disease.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy.

as SNFs. Due to nursing home industry efforts to meet the new certification requirements, the availability of certified nursing home beds, and hence nursing home utilization, increased. The number of persons receiving home health agency services remained relatively constant.

Utilization of Part B services, however, continues to grow. In particular, the utilization rate for hospital outpatient departments increased almost 5 percent from 1987 to 1988. The increase in Part B use is also in part a function of the shift from the inpatient to the outpatient setting. Greater use of reimbursable Part B services is partially due to more persons meeting the annual $75 deductible.

Medicare Payments

Preliminary estimates indicate that total Part A and Part B payments in 1990 were about $108.3 billion, an increase of 8.3 percent from 1989 and an escalation of 67 percent from 1984 (see Table 4-3). After adjusting for inflation, this was a 31 percent increase in real expenditures over the five-year period. Total Part A expenditures grew to $65.4 billion, a 6.7 percent increase from 1989. Total Part B expenditures increased 11.1 percent from 1989, from $38.6 billion to $42.9 billion.

Rates of spending for specific Medicare services, however, varied widely. In 1990, 90 percent of Part A expenditures, or $58.9 billion, were for inpatient hospital services (see Table 4-4). The rate of growth in hospital expenditures was 8.5 percent, which is slightly higher than in recent years. This is largely because in 1990 hospitals received the largest update yet to the PPS payment rates (an average of 4.72 percent).

Patterns of growth in expenditures for other Part A services, specifically SNF and home health agency services, reflect the fact that during a portion of calendar year 1990, the Medicare Catastrophic Coverage Act was still in effect. Expenditures for SNF services declined in 1990 relative to 1989 because most of fiscal year 1990 did not reflect the more liberal MCCA SNF policy. However, the clarification of eligibility requirements and increased number of SNF beds prevented expenditures from declining to pre-MCCA levels.

Home health agency expenditures continued to grow at a faster rate than expenditures for any other Part A service. This growth is in part a result of clarifications of the definitions of part-time and intermittent care. The new definitions became effective in November 1988, with reconsideration of claims denied retroactive to March 1987. These changes have broadened the scope of home health agency care from a strict emphasis on post-acute care to include some chronic care.

Preliminary estimates also indicate that Part B payments are growing at a faster rate than Part A

Table 4-3. Estimated Medicare Benefit Payments, 1980-1990

Year	Total Medicare		Part A		Part B	
	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change
1980	$36.4	--	$25.4	--	$11.0	--
1981	43.7	20.0%	30.6	20.3%	13.1	18.7%
1982	51.2	17.3	35.7	16.5	15.6	19.2
1983	58.1	13.5	39.9	11.8	18.3	17.4
1984	64.8	11.5	44.5	11.7	20.3	11.0
1985	69.8	7.8	47.1	5.7	22.9	12.8
1986	75.8	8.5	49.2	4.6	26.8	17.0
1987	82.0	8.2	51.3	4.2	30.9	15.3
1988	89.3	8.9	54.5	6.2	34.7	12.6
1989	100.0	12.0	61.3	12.5	38.6	11.2
1990	108.3	8.3	65.4	6.7	42.9	11.1

Note: Payments reported here are incurred expenditures rather than outlays.

SOURCE: Health Care Financing Administration, Office of the Actuary.

Table 4-4. Estimated Medicare Benefit Payments, by Type of Service, 1980-1990

Year	Part A						Part B			
	Inpatient Hospital		Skilled Nursing Facility		Home Health Agency		Physician		Outpatient Hospital	
	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change
1980	$24.4	--	$0.4	--	$0.6	--	$8.5	--	$2.0	--
1981	29.2	19.7%	0.5	9.5%	0.9	54.5%	10.1	19.7%	2.4	19.7%
1982	33.8	15.7	0.5	9.3	1.4	45.3	12.2	20.4	2.8	18.9
1983	37.6	11.2	0.5	6.7	1.7	28.2	14.3	17.1	3.3	16.9
1984	41.9	11.4	0.6	6.9	2.1	19.1	15.6	9.5	3.8	13.7
1985	44.3	5.7	0.6	2.9	2.2	5.2	17.2	10.3	4.4	16.0
1986	46.4	4.8	0.6	0.0	2.2	1.0	19.6	14.0	5.3	20.4
1987	48.4	4.3	0.6	8.5	2.2	-1.0	22.3	13.8	6.2	17.0
1988	51.0	5.4	1.0	52.9	2.4	8.2	24.6	10.3	7.1	14.5
1989	54.3	6.4	3.8	298.5	3.0	25.6	27.0	9.8	8.0	12.7
1990	58.9	8.5	2.5	-34.2	3.7	23.3	29.5	9.3	9.1	13.8

Note: Payments reported here are incurred expenditures rather than outlays.

SOURCE: Health Care Financing Administration, Office of the Actuary.

payments. It is estimated that from 1989 to 1990 outpatient hospital payments increased about 14 percent, while spending for physician services increased 9.3 percent.

Beneficiary Liability

The continuing increase in Medicare spending also affects beneficiaries. Medicare beneficiaries share financial responsibility for Medicare-covered services through premiums, copayments, deductibles, and physician unassigned charges in excess of the Medicare-allowed amounts (balance billing). These liabilities are not necessarily out-of-pocket expenses because many beneficiaries have supplemental health insurance. In 1990, beneficiary liabilities were 23.2 percent of Medicare expenditures (including payments for the Part B premiums), or 0.3 percentage points higher than in 1989 (see Table 4-5).

Beneficiaries paid 8.4 percent of their inpatient hospital bills in 1990, compared with 6.1 percent in 1989. This increase is primarily due to repeal of

Table 4-5. Estimated Beneficiary Liabilities, 1980-1990

Year	Total Medicare			Inpatient Hospital		Other Medicare	
	Beneficiary Liability (In Billions)	Total Expenditures (In Billions)	Beneficiary Share of Total Expenditures[a]	Beneficiary Liability (In Billions)	Beneficiary Share	Beneficiary Liability (In Billions)[a]	Beneficiary Share
1980	$10.3	$ 36.4	22.0%	$1.7	6.7%	$ 8.5	41.5%
1981	12.1	43.7	21.7	2.0	6.5	10.1	41.2
1982	14.6	51.2	22.2	2.7	7.3	11.9	40.6
1983	16.3	58.1	21.9	3.2	7.7	13.1	39.0
1984	18.1	64.8	21.8	3.4	7.4	14.7	39.1
1985	19.1	69.8	21.5	3.4	7.1	15.7	38.1
1986	21.1	75.8	21.8	4.1	8.2	17.0	36.6
1987	23.4	82.0	22.2	4.5	8.5	18.9	36.0
1988	27.3	89.3	23.4	4.8	8.6	22.5	37.0
1989	29.7	100.0	22.9	3.6	6.1	26.1	36.3
1990[b]	32.4	108.3	23.2	5.4	8.4	27.0	35.3

[a] Medicare Part B premiums are included in total Medicare beneficiary liabilities. Total expenditures are total Medicare expenditures.

[b] Estimates for 1990 are preliminary and subject to change.

SOURCE: Health Care Financing Administration, Office of the Actuary, Office of National Cost Estimates.

the MCCA, which had eliminated hospital coinsurance. The 8.4 percent liability that beneficiaries paid in 1990 is similar to the pre-MCCA percentage. Starting in 1988, the inpatient hospital deductible was calculated based on the PPS update factor. This change was enacted to help slow the previous rise in hospital deductibles that occurred when they were based on the average cost per inpatient day. The average cost per day increased rapidly in the early years of PPS as a result of reduced lengths of stay. Except for the short period covered by the MCCA, beneficiary liability for inpatient expenses seems to be relatively constant.

For non-inpatient services, beneficiary liability is declining over time. The amount of the copayments and deductibles varies considerably by service. There is no copayment for home health agency services, while there is a 20 percent copayment for physician services. In 1990, the average beneficiary share of non-inpatient services was 35.6 percent, a 0.7-percentage-point decrease from 1989. Beneficiary liability for physician services will be reduced by the continued implementation of physician payment reform, such as limiting the amount of balance billing allowed. Alternative payment methodologies for hospital outpatient and SNF services, under consideration by HCFA, may also affect beneficiary spending.

The inpatient hospital deductible for the first 60 days of care grew to $628 in 1991, a 6.1 percent rise from 1990. In addition, the deductible for Part B services, which has remained at $75 since 1982, increased to $100 per year in 1991. The premium for Part B services increased to $29.90 per month ($358.80 per year) in 1991, from $28.60 per month ($343.20 per year) in 1990. These changes will expand beneficiary liability and partly offset any reductions in liability that are achieved through physician payment reform.

In addition to beneficiary liability for covered services, beneficiaries have to pay for services not covered by Medicare. Most notably, Medicare does not cover prescribed medicines, most nursing home care, or dental visits, except in very specific circumstances. Furthermore, Medicare does not cover most preventive services, although screening mammography and Pap smears are covered starting in 1991. While the bulk of total expenditures for persons 65 and older are for inpatient services, other services that are not generally covered by Medicare constitute 40 percent of expenditures for persons 65 to 74, and 46 percent of expenditures for persons 75 and older (see Table 4-6). Given that beneficiaries also are at risk for deductibles and coinsurance for Medicare-covered services, their out-of-pocket expenditures may be considerable, especially for persons with no supplemental insurance.

Table 4-6. Average Total Expenditures Per Elderly Person, 1987

Type of Service	Elderly Medicare Enrollees	
	Age 65-74	Age 75 and Over
All medical services	$4,069	$5,422
Inpatient hospital	2,448	2,933
Physician visits	688	739
Non-physician visits[a]	184	205
Prescribed medicines	258	288
Dental visits	137	82
Other medical care[b]	353	1,176

[a] Includes payments for audiologists, chiropractors, home health aides, medical social workers, mental health counselors, nurses and nurse practitioners, occupational therapists, optometrists, physical therapists, physician's assistants, psychologists, respiratory therapists, speech therapists, and technicians.

[b] Includes payments for eyeglasses, hearing aides, medical supplies and equipment, and modifications made to respondents' homes due to illness or injury of the respondent or a family member.

SOURCE: Agency for Health Care Policy and Research, National Medical Expenditure Survey.

SUPPLEMENTAL INSURANCE

Almost all the elderly receive health insurance coverage through the Medicare program; only 300,000 elderly, or 1 percent of the elderly population, have no insurance at all.[1] As noted above, beneficiaries are liable for copayments, deductibles, and physician unassigned charges for Medicare services. Many beneficiaries have supplemental insurance protection to cover these costs. In addition, some beneficiaries have insurance that provides benefits that are not offered by Medicare.

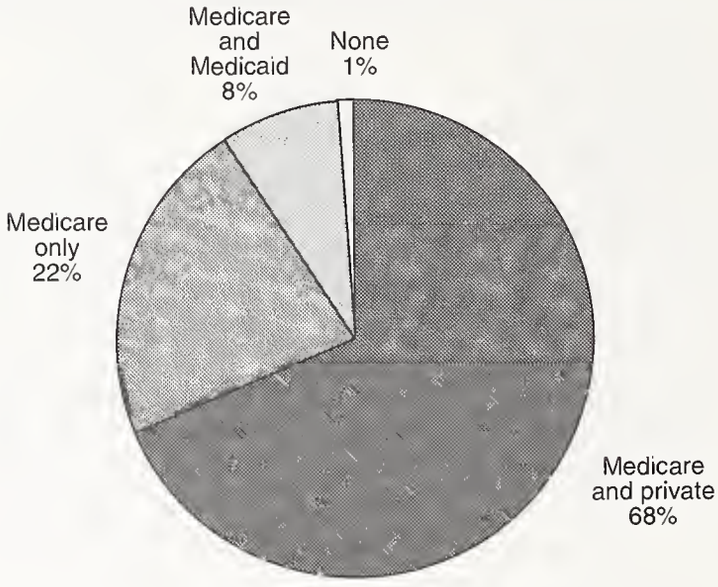
Beneficiary Coverage

Supplemental insurance is any private health insurance policy held by a beneficiary. This includes medigap policies purchased through a commercial insurer or Blue Cross/Blue Shield, post-retirement health benefits offered through a

former employer, or comprehensive employer-sponsored policies for the aged who continue to work.

Almost 70 percent of the elderly have private supplemental insurance in addition to Medicare. An additional 8 percent receive assistance from Medicaid and other public programs. Persons with both Medicare and Medicaid coverage are called "dual-eligibles." This leaves slightly more than 22 percent of Medicare beneficiaries without any supplemental coverage (see Figure 4-1).

Figure 4-1. Health Insurance Coverage of the Elderly, 1988 (In Percent)



SOURCE: Congressional Budget Office estimates of the non-institutionalized elderly based on the Current Population Survey, March 1989.

The pattern of supplemental insurance coverage varies significantly by income (see Table 4-7). Beneficiaries with higher incomes are more likely to have supplemental insurance, while those with low incomes are more likely to be eligible for both Medicare and Medicaid coverage. Thus, the beneficiaries in the middle-income range may have the greatest financial liability for medical costs.

The type and cost of private supplemental insurance relate to the method of obtaining coverage. In 1988, for example, 38 percent of Medicare beneficiaries with private supplemental insurance obtained coverage under group policies from current or former employers.[2] In most cases, the employer paid some or all of the premium. Another 44 percent purchased individual polices.

Most supplemental policies available to Medicare beneficiaries provide reimbursement only for Medicare-covered services. Reimbursement is generally determined in accordance with Medicare policies. As a result, these policies may not insure against several of Medicare's notable gaps in coverage. Most policies, for example, do not cover nursing home stays not meeting Medicare requirements, the full price of unassigned physician services, physical examinations, routine dental care, vision care and eyeglasses, or hearing aids. While some policies provide additional benefits, such as partial coverage of unassigned physician bills and prescription drugs, the majority of plans sold by the two largest medigap insurers do not.[3]

Payments

In 1989, private insurance (medigap) policies paid an estimated $8.3 billion in benefits, while Medicaid paid about $1.2 billion for dual-eligibles. This represents a 5 percent decrease from 1988, when private insurance paid about $8.8 billion and Medicaid paid $1.3 billion. The decrease can be

Table 4-7. Health Insurance Coverage of the Elderly Population, by Income, 1988 (In Millions)

Insurance Status	Total[a]	Income[b] Poor	Near-Poor	Non-Poor
Total elderly	27.8	4.5	8.6	14.7
Medicare only	6.5	1.7	2.7	2.1
Medicare and private[c]	17.8	1.3	4.9	11.5
Medicare and Medicaid[d]	2.3	1.2	0.7	0.3
Insured through non-Medicare plan	1.0	0.1	0.1	0.8
None	0.3	0.1	–[e]	–[e]

[a] Total may not add due to rounding and exclusion of multiple policy holders.

[b] Poor: Less than 100 percent of the Federal poverty level. Near-poor: between 100 percent and 200 percent of the Federal poverty level. Non-poor: More than 200 percent of the Federal poverty level.

[c] Some individuals, such as Federal or state employees, have insurance other than Medicare.

[d] Some individuals also have private insurance or CHAMPUS.

[e] Less than 75,000.

SOURCE: Congressional Research Service estimates of the non-institutionalized elderly population based on the Current Population Survey, March 1989.

partially attributed to MCCA, which was effective for most of calendar year 1989. In 1987, medigap policies expended about $8 billion and Medicaid about $1.2 billion.[4] With the repeal of catastrophic benefits, it is likely that these policies will pay more in benefits in the future.

Premiums

According to a 1989 GAO survey, premiums for medigap policies were expected to increase an average of 19.5 percent in 1990 over 1989. These rate increases occurred because insurers were required to cover the services that MCCA had covered during 1989, before the act was repealed. In addition, a survey conducted by the Blue Cross/Blue Shield Association found that, while overall medigap premiums rose 8 percent in 1989, non-group policy premiums grew at a much higher rate. Non-group policy premiums increased about 29 percent in 1990. Blue Cross/Blue Shield estimates that had catastrophic legislation not been repealed, the 1990 increase for non-group policies would have been about 9 percent.

The insurance companies surveyed attributed half of this growth in premiums to increased benefits and administrative costs. The remaining portion was ascribed to medical cost inflation, increased use of health services, and prior years' claims experience.

Regulations Affecting Medigap Policies: The Baucus Amendment

Because many medigap policies did not provide adequate protection to beneficiaries over and above their Medicare coverage, legislation was enacted to ensure that the medigap policies better served this function. Medigap policies are now subject to section 1882 of Title XVIII of the Social Security Act (the Baucus amendment). This amendment established minimum standards for the sale and marketing of certified Medicare supplemental insurance. The minimum standards, which are based on a model developed by the National Association of Insurance Commissioners (NAIC), are designed to protect beneficiaries from unscrupulous insurers. These standards can be enforced either through the Voluntary Certification Program or by the states.[5]

MCCA, which substantially expanded Medicare coverage, required those providing supplemental coverage to (1) provide additional benefits to Medicare beneficiaries equal in value to the duplicated benefits in the legislation, or (2) refund an amount equal to the actuarial value of the duplicated benefits. When MCCA was repealed, therefore, the NAIC was required to adopt new standards to aid in the transition. The new minimum benefit standards for medigap policies differ from those required before MCCA was enacted. For example, medigap policies must:

- Cover either *all* or *none* of the Part A deductible. Prior to this rule, policies could cover a portion of the deductible.

- Cover all coinsurance for services covered by Part B of Medicare, after the policyholder has paid the Part B deductible for that year. Earlier standards allowed the policies to pay Part B coinsurance after the beneficiary paid $200 per year and to limit coverage to no more than $5,000 in annual benefits.

OBRA 1990 further modified the Baucus amendment. This act directed that policies be simplified and standardized, limited the number of optional benefit packages offered, increased the protection against sale of duplicative policies, and established additional consumer protections.

With the repeal of catastrophic coverage, beneficiaries face greater liability, thus making medigap policies increasingly important. Concerns have been raised about whether medigap policies are adequately protecting beneficiaries from out-of-pocket costs. Another growing concern is the proportion of premiums returned to policyholders in the form of benefits, referred to as the loss ratio.

As medigap premiums rise, there is increased interest in the proportion of premiums paid out in benefits. Extremely low loss ratios indicate that beneficiaries are paying too much for the coverage they receive. The Baucus amendment established target loss ratios of 60 percent for individually purchased policies and 75 percent for group policies. Therefore, for every dollar paid in medigap premiums, at least 60 cents should be paid out in benefits for individually purchased policies and 75

cents for group policies. OBRA 1990 increased the standard for the loss ratio for individually purchased plans to 65 percent. Further, OBRA 1990 required plans not meeting the applicable loss ratio to provide rebates to policyholders. The NAIC uses a two-tier test to determine compliance with the loss ratio target. It essentially provides that policies that have been in force for three years or more should meet the target now while polices in force for less than three years should meet or exceed the target in the third year.

In 1988, 38 percent of medigap policies were below the minimum loss ratios described above.[6] However, about 88 percent of the premium dollars were with companies with loss ratios that met the standards. This means that the larger companies tended to be in compliance. For Blue Cross/Blue Shield plans in force for more than three years, the loss ratios were 90 percent or more.

Post-Retirement Health Benefits for Retirees: Employer-Based Policies

Post-retirement health benefits are provided to many retirees (generally 55 and over) and usually to their dependents through an employer's group health plan. Employer-provided coverage is an earned benefit and is tax-free. A PRHB plan is usually less expensive than an individual policy the retiree could purchase with similar coverage, due to lower administrative and marketing costs and the lower risk associated with group coverage. PRHBs are the main source of health insurance for most retirees under age 65.

Eligibility for PRHBs often is determined by retiree age and length of service requirements similar to those for early retirement. Employers frequently require 15 years of service, as well as attainment of age 55 or 60. Amounts of payment and benefits of this insurance also vary.

Coverage—The extent of employment-related coverage is inversely related to retiree age. Seventy-one percent of retirees between 55 and 59 had employment-related coverage in 1987, while only 33 percent of those 75 and over had such coverage.[7] The opposite pattern holds for retirees with other private health insurance coverage. Only 11.2 percent of retirees 55 to 59 had private health insurance coverage, while 43.5 percent of those over 75 had other private coverage.[8]

Nearly 50 percent of retired men in 1987 were policyholders on an employment-related plan. In comparison, only 28 percent of women were policyholders. Nearly 40 percent of white retirees were covered under an employment-related plan (policyholder or dependent) compared with 29 percent of black and 29 percent of Hispanic retirees. More than 50 percent of black and Hispanic retirees did not have private coverage, compared with 15 percent of white retirees.

Further, certain industries are more likely to provide post-retirement health insurance. Employer size, personnel skill level, the presence of nonseasonal workers, and union representation appear to play a role. Persons retiring from manufacturing, transportation, communication, utilities, and public administration were most likely to have employment-related health coverage.

Types of Plans—The types of plans offered by employers vary. According to a preliminary survey of retiree medical data by the Wyatt Company in 1990, 84 percent of the PRHBs offered the same health benefits package in effect prior to retirement.[9,10] The remaining firms either limited coverage to core medical benefits or required retirees to pay higher coinsurance and deductibles.

A 1988 survey by Foster Higgins found that 43 percent of employers providing PRHBs for retirees over 64 offered a Medicare carve-out plan. For this type of plan, benefits are determined (which are basically the same as active employees' benefits) and then reduced by Medicare payment. In 1988, 35 percent of employers offered Medicare carve-out plans. The number of employers that coordinate benefits with Medicare decreased slightly from 34 percent in 1987 to 33 percent in 1988. Coordinating benefits allows retirees to receive up to 100 percent of expenses from a combination of Medicare and the employer's plan. Finally, those offering Medicare supplemental plans dropped from 28 percent in 1987 to 24 percent in 1988.

According to a survey by the Wyatt Company in 1990, 45 percent of all PRHB plans were Medicare carve outs, while 37 percent coordinated benefits with Medicare. The remaining plans were Medicare supplement, fixed allowance per benefit, or HMO policies.

Premiums—Most plans require the retiree to pay a portion of the PRHB's costs.[11] According to the Employee Benefit Research Institute (EBRI), 44 percent of retirees in 1988 had employment-related supplemental insurance for which the employer paid the entire premium, and 37 percent had policies for which the employer paid a portion of the premium.[12,13]

Contributions are required by 67 percent of plans covering retirees under 65; in 1990, the average annual individual contribution for these retirees ranged from $413 to $423. The contribution for these retirees and their spouses ranged from $1,001 to $1,059. While the range was greater for retirees 65 and older depending on the plan type, the amount was substantially less. For the retiree only, it ranged from $180 to $216.

Costs—In 1988, PRHBs paid an estimated $20 billion in benefits. Total health plan costs per employee for employers offering PRHBs increased with the proportion of retirees in the plan. For instance, for employers with 30 percent or more of the participants retired, the average cost per employee was $3,209, compared to $2,211 for employers with less than 10 percent of participants retired.[14]

Most workers retire between 60 and 65, with an average retirement age of 62.[15] In 1988, retirees under 65 comprised one-third of all retirees covered by company health plans but received about one-half to two-thirds of the benefits. The GAO estimated employers' retiree health costs for 1988 at $777 per retiree 65 and over and $2,602 per retiree under 65.[16] It is assumed that the costs per early retiree are also higher than those for the active worker. Employers' health expenditures are greater for workers retiring before 65 because they are not yet eligible for Medicare; therefore, the employers' health care policy is the primary payer. Furthermore, in some cases early retirees may have poorer health at retirement than workers who wait until they are 65 to retire.

Future of PRHBs—For the past few years, the obligations of employers to PRHBs have grown. Roughly one in six older Americans receives health benefits through plans sponsored by former employers. Rising health care costs have made these benefits a serious and escalating financial burden on employers.

Estimates of the number of currently active employees who may eventually receive retiree health benefits vary. The Department of Labor estimated that almost 10 million active workers, or 20 percent of the work force age 40 and over (including eligible spouses and dependents), will eventually retire with employer-sponsored health benefits. Other estimates range as high as 25 million active workers, or 34 percent of the work force.[17]

Estimated costs for retiree health care coverage vary depending on assumptions concerning medical expense inflation, utilization, number of retirees, availability of existing and future technologies, and extent of coverage. Regardless of the assumptions used, the magnitude of companies' liabilities for retirees' health care coverage is significant. On the basis of Department of Labor figures, the General Accounting Office estimated that health benefit coverage will cost employers about $9 billion in 1988 for 7 million retirees and their dependents.[18] This cost is expected to grow, in today's dollars, to over $22 billion in 2008, assuming coverage and benefits do not change.[19]

The Department of Labor estimates that total accrued liability (that is, the net present value of PRHBs for active and retired employees) was $98 billion in 1983. Since most PRHBs are not prefunded, the accrued liability represents the present value of funds that the employer must raise and pay in the future for their currently promised benefits. This compares to Department of Labor estimates of about $4 billion in current expenses in 1983 (that is, pay-as-you-go).[20] Labor estimates the accrued costs for private PRHB liabilities at $402 billion in 1988, whereas EBRI estimates these costs at $399.1 billion in 1988.[21,22]

In response to growing concerns about the financing of PRHBs, the Financial Accounting Standards Board has issued new accounting standards for post-retirement benefits other than pensions. This rule, which has been expected for some time, will require employers to recognize the cost of benefits during the employee's working years, as is the case with pensions, rather than when benefits

are paid. In general, this change must be adopted no later than each company's first fiscal year beginning after December 15, 1992.

While this requirement does not mandate a change in the funding of PRHBs, it would decrease the net income and net worth of a company to the extent it increases the reported compensation benefit. In particular, mature companies (those with a large ratio of retirees relative to active employees) will tend to have larger increases in annual costs compared with less mature companies. Based on a survey of 76 retiree medical plans, the annual cost of PRHBs would total 12 percent of payroll (about 10 times more than the current pay-as-you-go system) if it were calculated on a basis similar to that used for pension plans.[23,24] In addition, the General Accounting Office estimates that if the nation's employers had begun prefunding their PRHBs in 1988, companies would have had to set aside an estimated $32 billion—3.5 times their pay-as-you-go costs. This is equal to one-eighth of the pretax profits of American corporations.

In response, employers are restructuring their retiree health benefits. For example, 21 percent of employers surveyed by Foster Higgins increased or planned to increase the level of employee contributions from 1988 to 1990. Furthermore, 12 percent of employers had decreased benefits in 1988 or 1989.

Medicaid Coverage of Medicare Beneficiaries and Retirees

In 1988, nearly 8 percent of Medicare enrollees were dual-eligibles, receiving both Medicare and Medicaid. Another 2 percent of enrollees received other public insurance, primarily veterans and military retiree health benefits.[25] Medicaid provides additional protection to poor Medicare beneficiaries. However, while Medicaid and other public assistance are more comprehensive than most medigap insurance (which pays primarily the copayment and deductible), it is less comprehensive than some PRHBs.

Approximately 4.2 million (or 19.1 percent) of all retired persons lack private health insurance. Medicaid and state or local programs cover only 22 percent of retirees without private coverage. Particularly at risk are the very old. Nearly 40 percent of retirees without private coverage are age 75 or older, yet only one-quarter of these retirees receive Medicaid.[26] The remaining 78 percent are at risk for large out-of-pocket expenses, should they become ill or disabled.

Summary

With the repeal of catastrophic coverage, supplemental insurance has become more important for Medicare beneficiaries. However, some beneficiaries are unable to purchase additional coverage. While the NAIC new model standards have expanded the required benefits offered by medigap policies, many beneficiaries remain unprotected against catastrophic losses.

PRHBs are an important benefit for retirees. They are often the only source of health insurance coverage for retirees 55 to 64 years of age. However, PRHB viability is affected by several factors. Today, the cost for retiree health coverage accounts for an average 14 percent of total health plan costs. In certain industries, however, retiree health costs account for a much larger share; 69 percent of mining and construction employers and 53 percent of utilities employers report spending more than 20 percent of the total health plan costs on retirees.

Further, under a new FASB requirement, employers will have to measure and report retiree health benefit liability while the employees are still working. Currently, very few companies prefund this benefit and doing so may be extremely expensive for many companies. Even if companies do not actually set aside a pool of money to fund this benefit, the estimates of liability will affect their balance sheets. Employers are beginning to realize the costs of PRHBs and are looking at ways to curb or reduce benefits. Medicare beneficiaries could ultimately represent a growing financial burden to industries given changing demographics and recent trends in Medicare payment policy.

LONG-TERM CARE

Long-term care is a set of health, personal care, and social services delivered over a sustained period of time to persons who have lost or never acquired some degree of functional capacity.[27] The care is generally required on an ongoing basis. Long-term care includes medical and therapeutic

services for the management and treatment of chronic conditions, as well as assistance with basic activities of daily living, such as bathing, dressing, toileting, housekeeping, and meal preparation. Services can be provided in a variety of settings: in an institution (such as a nursing home), in an individual's home, or in the community. Approximately 7 million elderly people require long-term care because of chronic conditions that limit their ability to care for themselves.[28] However, because Medicare and most supplemental insurance plans do not cover long-term care services, the consequences can be financially devastating.

Site of Care and Financing

The majority of the elderly receiving long-term care, 5.6 million, live at home. Some receive care in their community, while others have services delivered in their home. The remaining 1.5 million live in nursing homes. Recent research suggests that, if current policy continues, of the approximately 2.2 million people who turned 65 in 1990, about 0.9 million (or 43 percent) are expected to receive nursing home care before they die.[29] Of the people who will receive nursing home care, 33 percent will spend at least three months, 24 percent will spend at least one year, and 9 percent will spend at least five years in a nursing home.

Although only 20 percent of people receiving long-term care services use nursing home care, more than 80 percent of spending on long-term care, about $53 billion, is spent on nursing home services. The distribution of spending by site of care reflects both the high cost of nursing home services and the propensity of Medicaid to pay for nursing home care. Thirty-seven percent of Medicaid expenditures in 1988 was for nursing home care, and less than 1 percent was for home health care services.[30]

Personal, out-of-pocket payment, the largest private source of spending for long-term care services, totaled almost $23 billion in 1988. Medicaid, the largest source of public spending, also contributed $23 billion. Together, private out-of-pocket expenditures and Medicaid accounted for more than 85 percent of expenditures for long-term care. Medicare and other government programs paid for an additional 12.5 percent, and private insurance paid for the remaining 2.5 percent. Payment for nursing home care is even more concentrated in personal spending and Medicaid, which accounted for 49 percent and 44 percent in 1988, respectively. Medicare, which provides only limited SNF care benefits, is a minor payer of nursing home care.

Changes in the Private Market for Long-Term Care Insurance

The private market for long-term care insurance is relatively new and small.[31] Historically, insurers have been reluctant to offer long-term care benefits because of the fear that people who need the benefit would be more likely to purchase it, and once people had insurance they would be more likely to use the benefits. Consumers were also reluctant to purchase long-term care insurance, erroneously believing that Medicare would pay for an extended stay in a nursing home. More recently, public knowledge about the limitations of Medicare coverage may be increasing. In addition, insurers have developed policies to limit their risk.

The long-term care insurance market has grown rapidly in the last few years in terms of both the number of companies offering policies and the number of policies sold. Research by the Health Insurance Association of America on the long-term care insurance market as of mid-1990 identified 134 firms that had sold more than 1.65 million policies. The market is dominated by 15 firms that sold over three-fourths of all policies. Most policies are sold to individuals by company agents or independent brokers. Other long-term care insurance policies are being sold through groups, employers, and as part of life insurance policies.

Recent market and regulatory pressures have led to changes in long-term care policies. Most of the policies studied by HIAA offer nursing home and home health care on the basis of physician certification; prior hospitalization is rarely required. However, the amount of coverage is often limited, with four years of nursing home coverage typically the maximum. Most policies were sold to individuals up to the age of 84, with a 30-day refund, and all were guaranteed renewable. Most also offered an inflation protection feature for a higher premium. However, these policies generally were expensive. As of 1989, a typical policy that covers home care and up to four years of nursing home care and

offers some inflation protection would cost $658 per year if purchased at the age of 50, $1,395 at the age of 65, and $4,199 at the age of 79.

The private insurance industry appears to be responding to the expanding market for long-term care insurance and is offering a growing number of policies. However, the private insurance market is not likely to address the issue of long-term care payment for the majority of elderly because of the high cost of the policies. Increased awareness of the issue by the public and a number of new proposals for dealing with long-term care financing may increase availability of this coverage in the future.

ACCESS TO CARE

There are numerous barriers to access to needed medical care. Financial barriers, such as lack of insurance or large out-of-pocket payments, discourage beneficiaries from receiving needed care. There are also structural barriers to access, such as lack of specific medical services in the local area or difficulty in reaching facilities that provide the needed services.

The Pepper Commission report on comprehensive health care, *A Call for Action*, demonstrated that lack of supplementary coverage influences the health care services received by elderly people. When utilization of ambulatory care services was examined, after controlling for socioeconomic and health status differences, the elderly relying solely on Medicare for coverage used fewer services than those with either supplemental private insurance or Medicaid (see Figure 4-2). In addition, those with Medicare coverage only were twice as likely as those with supplemental insurance to have no physician visits during a year.

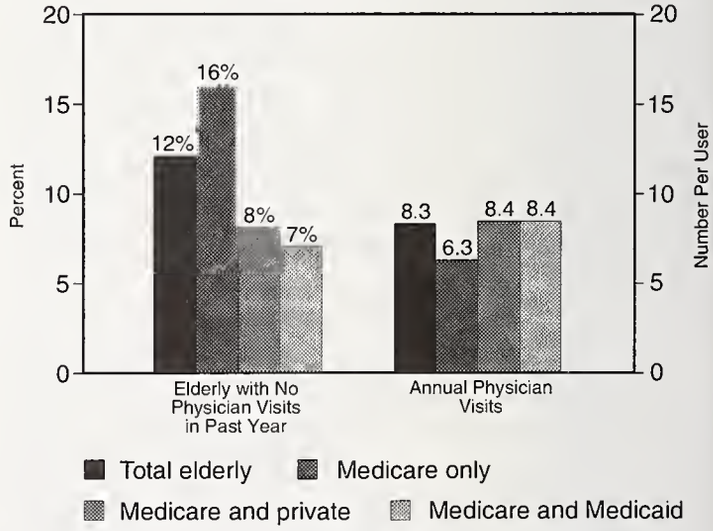
Falling admissions to rural hospitals and the closing of many hospitals in recent years have raised fears that some groups of Medicare beneficiaries may have difficulties in obtaining the services they need. Access may be impaired when advanced technologies are not available in areas where beneficiaries reside or when more basic services are not available because the only medical facility in the area closes. In this section, ProPAC examines the evidence concerning access to care for rural Medicare beneficiaries.

Access to Inpatient Hospital Care for Rural Medicare Beneficiaries

Admissions to rural hospitals have been declining faster than admissions to urban hospitals for the past decade. The resources and scope of services in small rural hospitals are often limited. Beneficiaries living in areas served by these hospitals frequently have to travel to urban areas or rural referral centers for surgery and technology-intensive care. The need to travel could reduce access to needed care for rural residents.

To assess relative differences in access, the Commission compared hospital admission rates for Medicare beneficiaries living in rural and urban areas.[32] In the five states examined, the per capita admission rates of Medicare beneficiaries living in rural areas declined by 26 percent between 1984 and 1988, compared with 20 percent for urban beneficiaries. For both urban and rural beneficiaries, the decline was steepest from 1984 to 1986. Although the inpatient utilization patterns of rural and urban beneficiaries are becoming more similar, the admission rate for rural beneficiaries was still 14 percent higher than the rate for urban

Figure 4-2. Utilization of Physician Services by the Elderly Population, by Type of Insurance, 1987



Note: Data on the elderly population are adjusted for socioeconomic characteristics and health status.

SOURCE: Congressional Budget Office, 1989. Based on anlaysis of the 1987 National Medical Expenditure Survey.

beneficiaries in 1988. Populations served by the smallest rural hospitals (fewer than 50 beds) generally had the highest admission rates.

It was hypothesized that older beneficiaries in rural areas might have particular access problems due to difficulty in traveling. In fact, their admission rates were higher than those of their urban counterparts, although the difference in admission rates between urban and rural beneficiaries was smaller for older beneficiaries than for younger beneficiaries. The higher inpatient utilization rate among rural Medicare beneficiaries could be caused by a number of factors, including health status or practice pattern differences.[33]

Certain surgical procedures are rarely available in small rural hospitals. However, the study found that admission rates for these procedures were similar for beneficiaries living in rural and urban areas. There was little difference in admission rates for technology-intensive procedures—which are typically performed in larger hospitals or referral centers—although the rate for rural residents was slightly lower (3 percent). Admission rates are increasing for these types of cases for both urban and rural beneficiaries. Coronary artery bypass surgery, a common technology-intensive procedure, illustrates the trend. In 1984, admission rates for rural residents in all five states were below the rates for urban residents by 8 percent, but by 1988 bypass surgery rates were 4 percent higher for rural beneficiaries than for urban beneficiaries.

Admission rates for surgical procedures frequently performed in local hospitals changed little between 1984 and 1988. Rural beneficiary admission rates were higher than urban beneficiary admission rates. Most of the difference in the rates is due to admissions for major joint procedures, transurethral prostatectomies, and uterus and adnexa procedures.

Medical admissions declined by 28 percent for rural beneficiaries and 20 percent for urban beneficiaries between 1984 and 1988. The decline was much larger between 1984 and 1986 than between 1986 and 1988, however.

In 1988, medical admission rates for rural beneficiaries were 7 percent to 16 percent higher than for urban beneficiaries in the five study states. The higher admission rates were particularly pronounced for conditions such as pneumonia and angina, in which effective management or timely treatment of the patient in an ambulatory setting might help prevent deterioration of the patient's condition, which could lead to hospitalization (called "ambulatory care sensitive cases"). Admission rates for cases typically treated in local hospitals, such as cardiac arrhythmias and gastroenteritis, were also markedly higher for rural beneficiaries. Admission rates for these types of cases were highest for residents living in rural areas served by local hospitals with fewer than 50 beds. In particular, for residents of these communities, admission rates for ambulatory care sensitive cases ranged from 19 percent to 47 percent higher than the state average. These high utilization rates lead to concerns about general health status of rural beneficiaries as well as practice patterns and the availability of other medical care.

While rural residents go to their local hospital for some types of inpatient care, fewer than half go to their local hospital for surgery. Large urban hospitals increased their share of total admissions of rural beneficiaries from 26 percent to 31 percent between 1984 and 1988. Much of this increase, however, is caused by the steep decline in medical admissions and the slight increase in surgical admissions over the period. Small rural hospitals generally perform very little surgery. Rural residents, however, do not appear to be hindered from receiving medical or surgical inpatient care.

As part of its work on episodes of care, ProPAC is analyzing practice patterns for acute myocardial infarction. This study will examine differences in treatment for urban and rural beneficiaries and types of procedures provided by urban and rural hospitals. A technical report describing results of this work will be available this fall.

Hospital Closures

Hospital closures have increased since the onset of PPS. The closing of a hospital may present access problems if it leaves certain Medicare beneficiaries with no health care alternatives. On the other hand, if prior to the hospital's closure beneficiaries bypassed the facility to obtain health care services from other providers, then closure may have little effect on beneficiary access. In these

cases, closure may merely represent increased efficiency in the hospital industry. Rural areas typically have fewer health care resources than urban areas. Therefore, when a rural hospital closes, particularly in a county with no other hospitals, access to care is likely to be compromised more than when a similar facility in an urban area closes.

Hospitals That Closed in 1989—In 1989, 65 community hospitals closed; 44 were in rural areas and 21 were in urban locations.[34] This compares to 46 rural and 39 urban hospitals that closed in 1988. Hospitals that closed in 1989 offered fewer high-technology services and fewer alternative level of care services than other hospitals (see Table 4-8).

Urban hospitals that closed tended to be in larger, more densely populated metropolitan areas with higher per capita incomes than urban hospitals that remained open (see Table 4-9). From 1984 to 1987, the population in urban areas where a hospital closed grew at less than half as fast as in areas with no closures. There were more physicians, general surgeons, and registered nurses in counties where an urban hospital closed than in urban counties without a closure (see Table 4-10). The per capita hospital bed supply was higher as well. These data indicate that urban hospital closures may have been associated with overcapacity or competition.

Rural hospitals that closed were located in areas with a smaller and more rapidly declining population than hospitals that remained open. Per capita hospital bed supply in rural areas with a hospital closure was higher than in areas with no closure. However, the levels of health personnel in rural counties with and without a closure were similar.

Both urban and rural counties where a hospital closed in 1989 had higher proportions of black and Spanish-speaking populations and higher unemployment than counties without closures (Table 4-9). The infant mortality rate in 1986 in rural counties where a hospital closed was significantly higher several years before the hospital closed than in rural counties without a closure. The difference was not as marked for urban counties. These data indicate that rural closures in particular may be associated with a poor socioeconomic environment.

Table 4-8. Comparison of Services Offered by Hospitals That Closed in 1989 and Hospitals That Remained Open

	Urban		Rural	
Services	Open	Closed	Open	Closed
High-technology services				
Ultrasound				
1984	91%	89%	76%	36%
1986	94	100	83	57
1988	93	67	80	42
Radiology				
1984	78	89	53	27
1986	74	78	49	21
1988	74	33	44	0
CT scanning				
1984	47	56	24	0
1986	66	44	43	0
1988	74	33	47	8
Ambulatory surgery				
1984	97	100	90	64
1986	97	100	93	71
1988	99	100	97	67
Alternative levels of care				
Rehabilitation outpatient				
1984	29	33	20	9
1986	34	22	21	0
1988	46	17	29	8
Home care				
1984	19	11	20	0
1986	30	11	37	7
1988	29	0	39	8
SNF or long-term care unit				
1984	6	0	11	0
1986	6	0	14	0
1988	10	0	18	0

Note: CT = computerized axial tomography, SNF = skilled nursing facility.

SOURCE: ProPAC analysis of American Hospital Association Annual Survey data.

Closures in Counties with No Other Hospital—There were 24 rural hospital closures between 1987 and 1989 in counties with no other hospital. Eight of these were in Texas. ProPAC compared these hospitals and the counties in which they were located to single-hospital counties that did not experience a closure and to counties that never had a hospital.

Previous analysis has shown that hospitals with higher occupancy rates tend to be in better financial condition. For three years before closure, the utilization of hospitals that had been the only ones in the county before they closed was below that of

Table 4-9. Population Characteristics of Counties with a Hospital in Operation and a Hospital That Closed

Characteristics	Urban Counties		Rural Counties	
	Open	Closed	Open	Closed
Population[a]	136,600	628,300	22,450	16,100
Population change[b]	4.7%	2.1%	-0.5%	-1.5%
Population per square mile	151	823	29	22
Income per capita[a]	$13,898	$16,077	$12,031	$12,221
Unemployment[a]	6.3%	7.0%	8.0%	9.2%
Infant mortality per 1,000 live births[c]	9.6%	10.4%	9.0%	13.8%
Black population[d]	5.9%	11.7%	1.9%	13.5%
Spanish-speaking population[d]	2.0%	8.2%	1.1%	1.2%

[a] 1987

[b] 1984-1987

[c] 1986

[d] 1980

SOURCE: ProPAC analysis of the Area Resource File.

hospitals that stayed open. Average occupancy levels, admissions, inpatient and outpatient surgical operations, case-mix indexes, births, and outpatient visits were lower in the hospitals that closed (see Table 4-11). Medicare and Medicaid patient shares were not significantly different.

The hospitals that closed offered fewer high-technology and alternative level of care services than did the hospitals that remained open. The hospitals that closed were also different from those that stayed open in other ways. They were smaller (41 beds versus 71 beds), less likely to have JCAHO accreditation (13 percent compared with 43 percent), and fewer had hospital volunteer programs (21 percent in contrast with 59 percent). Other research has suggested that the presence of volunteer programs is an indication of the community's involvement with the hospital and that community support is an important factor in remaining open.[35]

There were more hospital beds per capita in 1984 in the counties where the only hospital closed than in the counties where the only hospital remained open. In 1988, there were more physicians and nurses in the counties with an open hospital. The counties with no hospitals (either because a

Table 4-10. Health Care Resources in Counties with a Hospital in Operation and a Hospital That Closed

Health Care Resource	Urban Counties		Rural Counties	
	Open	Closed	Open	Closed
Physicians, 1988	12.1	22.7	6.6	6.2
Short-term hospital beds, 1987	2.8	4.7	3.7	6.3
General surgeons, 1988	0.9	1.5	0.7	0.7
Registered nurses, 1987	2.1	3.7	1.6	1.5
Nursing home beds, 1986	6.4	6.4	10.6	9.2

SOURCE: ProPAC analysis of the Area Resource File.

Table 4-11. Characteristics of Open Versus Closed Hospitals in Counties with Only One Hospital

Characteristic	Hospitals That Closed (Year Before Closure)			Hospitals That Stayed Open		
	One	Two	Three	1988	1987	1986
Occupancy	26%	29%	35%	41%	42%	43%
Admissions	643	821	894	2,131	2,178	2,298
Case-mix index	0.98	0.97	0.96	1.05	1.03	1.01
Inpatient surgical operations	112	158	159	588	616	620
Ambulatory surgical operations	113	100	59	--	457	383
Outpatient visits	3,958	5,919	4,437	15,441	13,290	12,315
Births	71	98	63	221	227	234
PPS costs	$2,021	$1,983	$1,678	$2,435	$2,242	$2,072
PPS revenues	1,772	1,703	1,647	2,350	2,180	2,041
PPS margin	-14.3%	-17.3%	-2.8%	-4.4%	-3.4%	-2.2%
Total margin	-6.8	-3.1	-1.6	0.7	-0.8	-0.9

SOURCE: ProPAC analysis of American Hospital Association Annual Survey data and Medicare Cost Report data from the Health Care Financing Administration.

hospital never existed or because the only hospital closed) had the highest number of nursing home beds per capita.

More large and urban hospitals were located in the counties contiguous to those where the only hospital closed than where the only hospital remained open. Beneficiaries living in counties where the only hospital closed were likely to live close to a large or urban hospital. They were also more likely to live near hospitals that offered high-technology services. In addition, hospitals that closed were located in more competitive areas than the hospitals that remained open.

Counties that never had a hospital had smaller populations than either counties where the only hospital closed or counties where the only hospital remained open. It is possible that these counties that never had a hospital were simply too small to support one. This is evidenced by the fact that the level of other health resources within each county was also lower than in the two comparison groups. The level of health resources in contiguous counties was similar to that of counties where the only hospital remained open but was lower than in counties where the only hospital closed.

Closure and Access to a Hospital—Although hospitals that closed between 1987 and 1989 did not offer as many services as hospitals that remained open, beneficiaries who used these hospitals may have been disadvantaged by the closures. However, analysis of beneficiary travel time and community health resources suggests that, relative to counties that never had a hospital, access to inpatient services was not significantly impaired by closure. After the closure of the only hospital, residents in these counties had to travel an average of 23 miles to reach the next nearest hospital (see Table 4-12). Their travel time for this trip was estimated to be 29 minutes. Distance and travel time were similar for residents of counties that

Table 4-12. Comparison of Average Distance and Travel Times to Nearest Hospitals for Two Types of Counties

Measure County Types	Hospital Types		
	Nearest	Nearest With >100 Beds	Nearest Urban
Distance (miles)			
Only hospital closed	23	47	65
Never had a hospital	21	35	36
Travel time (minutes)			
Only hospital closed	29	56	75
Never had a hospital	26	40	41

SOURCE: Abt Associates under contract to ProPAC.

never had a hospital—an average of 21 miles and 26 minutes. To reach a hospital of more than 100 beds or one in an urban area, residents of counties where the only hospital closed did not have to travel significantly farther than residents in counties where there had never been a hospital.

All but two of the counties where the only hospital closed had at least one health clinic sponsored by the local or state government. Other types of primary care facilities present in these counties included emergency care facilities, free-standing ambulatory care centers, and hospital outpatient clinics. About two-thirds of the counties were served by at least one home health agency. Moreover, an average of four physicians practiced in these counties.[36]

Compared to counties with a hospital closure, fewer primary care facilities and providers were present in the counties that never had a hospital, although the difference was not statistically significant. The one exception to this finding was that there were slightly more ambulance services in counties where the only hospital closed.

It does not appear, therefore, that access to inpatient hospital care has been impeded by rural hospital closures, even in counties where the only hospital closed. In most cases, hospital services were available in the next county. Hospital closure may have compromised access to inpatient care for beneficiaries in some areas, but adverse effects were not apparent from the study results. ProPAC will continue to monitor rural and urban hospital closures and the impact of these closures on Medicare beneficiary access to care.

QUALITY OF CARE

Health care cost containment efforts could affect the quality of care received by Medicare beneficiaries and others. Efforts to evaluate and improve the quality of medical care are under way at many levels—within medical societies, hospitals, communities, and in the Federal and state governments. Analyzing trends in quality of care is difficult for several reasons—insufficient data, difficulty of proving causal relationships between process and outcomes, and disagreement within the medical community about how to most effectively treat various medical conditions, to name a few. Despite the obstacles, researchers have attempted to measure changes in quality of care for Medicare beneficiaries. As the largest payer for health care services in the United States, the Medicare program has a significant stake in ensuring that its beneficiaries have access to and are provided with consistently high quality care.

The RAND Quality of Care Study

In October 1990, RAND published the results of the most ambitious study to date on the impact of PPS on quality of care.[37-41] The study compared pre- and post-PPS outcomes of care, process of care, and impairment at discharge for nearly 17,000 Medicare patients hospitalized for five common medical conditions. Half of the sample was drawn from patients hospitalized before PPS (from 1981 to 1982) and half after PPS was implemented (from 1985 to 1986).

The introduction of PPS was not associated with a rise in either short-term (30-day) or six-month post-admission mortality. This finding is consistent with previous ProPAC analyses of 30-day post-admission mortality rates for selected conditions. ProPAC found that for most conditions studied, mortality rates improved through 1988, the last year of data analyzed. The RAND study also found that the incidence of poor care, measured by physician review of medical records, declined from 25 percent before PPS to 12 percent afterwards.

Contrary to expectations that PPS would encourage the hospitalization of less severely ill patients, RAND found that patients were sicker at admission after the introduction of PPS. This finding may be attributed to the shift of less complex cases to the outpatient setting or to more stringent PRO review requirements. Consistent with the financial incentives of PPS, the average length of stay for the sample patients was 24 percent lower post-PPS.

In the early years of PPS, anecdotal reports that patients' health and welfare were being jeopardized by premature discharge associated with hospital response to the financial incentives of PPS were common. According to these reports, patients were being discharged from inpatient care "quicker and sicker." In its study of the effects of PPS on quality of care, RAND found evidence to support the existence of the quicker and sicker phenomenon.

For the five diseases studied, a greater proportion of Medicare beneficiaries were discharged home in an unstable condition—10 percent before the implementation of PPS compared with 15 percent after PPS. Patients in unstable condition at discharge were one and a half times more likely to die within 90 days of discharge than patients discharged in stable condition. However, extending the length of stay for these patients would not necessarily have reduced their mortality rate.

Peer Review Organizations

Peer Review Organizations continue to be the principal mechanism for monitoring quality of care provided to Medicare beneficiaries. The focus and methods of the PROs continue to evolve. For the past few years, PROs have conducted several types of reviews designed to detect utilization and quality problems believed to be commonplace. However, PRO findings of poor quality care are relatively uncommon. Confirmed quality problems were detected in about 1 percent of the 2 million inpatient records reviewed in 1990.[42]

HCFA is proposing to amend the PRO review scheme significantly. The changes are aimed at making the review process more efficient, moving towards a review system that focuses on patterns of care for individual beneficiaries, and improving consistency among the PROs.

The proposed program of quality and utilization review has been dubbed "NuPRO." In the short term, NuPRO would increase the random review of Medicare admissions from 3 percent to 10 percent. In addition, preadmission review would be eliminated except for those PROs that can demonstrate that review reduces inappropriate utilization. Readmissions will be reviewed only when they fall in the random sample, a significant decrease from their present review rate of 25 percent. Both preadmission and readmission review have been criticized in the past for being ineffective at detecting or reducing inappropriate or poor quality care.[43,44]

Although two HCFA-sponsored feasibility studies of PRO review of care provided in physicians offices are under way, HCFA is reducing levels of non-inpatient care review. In the next few years, review of ambulatory surgery cases will be reduced from its present level of 5 percent to 3 percent. In addition, review of nursing home and home health care provided between hospital admissions, presently at a 20 percent review rate, will be incorporated into the random sample.

The centerpiece of HCFA's plan to redirect and improve PRO effectiveness is computer-based review of inpatient medical records, referred to as the Uniform Clinical Data Set (UCDS). Data from medical records are analyzed using computer algorithms designed to detect inappropriate or poor quality care. If the data indicate a possible utilization or quality problem, the case is referred to a physician for review.

In the short run, it is hoped that the UCDS will help to ensure consistency among PROs. In the longer run, it could be used to analyze patterns of care and, when merged with other databases, be employed to evaluate the care provided to beneficiaries over time. UCDS has been field-tested and is being further evaluated by seven PROs. The PROs are reviewing a sample of medical records manually and using the computer-based method, and will compare the results.

Currently, the UCDS has several shortcomings. Using the UCDS is expensive and time-consuming; medical record abstractors can review only half the number of cases per day that they can manually. In addition, in field tests UCDS referred nearly 50 percent of medical records to physician reviewers. Only a small percentage of these cases showed evidence of actual quality problems. The algorithms that are used to analyze the care provided have not been evaluated by researchers or the medical community outside of HCFA. Although amending the algorithms may improve the UCDS review process, until computerized medical records become a standard feature of the health care system, the UCDS and other databases designed to evaluate quality of care are likely to be expensive.

The Agency for Health Care Policy and Research

The Agency for Health Care Policy and Research (AHCPR) was created by Congress in 1989 to enhance the quality and appropriateness of health care. The new agency was charged with developing guidelines for treating various medical conditions, particularly those common to Medicare

beneficiaries. Guidelines on pain management, benign prostatic hypertrophy, and urinary incontinence are being reviewed but have not yet been publicly released. AHCPR funds a variety of research projects on many diseases and procedures. Several grants are used to fund large research teams designed to analyze the outcomes of alternative courses of treatment for specific conditions—acute myocardial infarction, pneumonia, and back pain, to name a few. The activities of AHCPR will help delineate the best and most appropriate course of treatment for various diseases. The guidelines it develops will ultimately be disseminated to physicians and hospitals, and may be used to improve Medicare quality assurance mechanisms.

Summary

The quality of care provided to Medicare beneficiaries, as measured by post-discharge mortality and process of care, improved after the implementation of PPS. The increase in the number of patients discharged in an unstable condition, however, highlights the need for strong, well-directed quality assurance mechanisms—both in hospitals and in the Medicare program. The most recent data used in the RAND study are nearly five years out of date. Since 1986, hospital financial performance has declined. Thus, quality of care trends need to be reevaluated and quality assurance activities amended to meet the present day needs of Medicare beneficiaries. Medical practice guideline development, presently under way in AHCPR as well as in many hospitals and medical societies, is an important element in maintaining and improving quality of care.

CONCLUSIONS

The Medicare program continues to cover the acute health care needs of almost all elderly Americans. Currently, no evidence exists that access to services or quality of care have been sacrificed for these individuals, even in the face of strong pressures for cost control. Nevertheless, ProPAC will continue to monitor access and quality for beneficiaries.

While most elderly have other coverage to help pay the portion of Medicare costs that Medicare expects them to pay, 22 percent do not; these individuals face substantial liabilities if they incur large health care costs. In addition, there are large gaps in what Medicare will pay for, most notably long-term care. Pressures on the insurance industry, such as the regulations imposed by the FASB, may indirectly affect beneficiaries if companies substantially reduce benefits.

The goal of the Medicare program is to ensure that care is provided to beneficiaries in the most efficient manner, without sacrificing quality or access to that care. As pressures mount to control costs, it is even more important to monitor access and quality of care that is provided. ProPAC will continue to monitor trends in these areas, and to explore and develop solutions to these important issues.

Notes to Chapter 4

1. Diane Rowland, "Fewer Resources, Greater Burdens: Medical Care Coverage for Low-Income Elderly People," in *A Call for Action*, Supplement to the Final Report, U.S. Congress, The Pepper Commission, U.S. Bipartisan Commission on Comprehensive Health Care (Washington, DC: U.S. Government Printing Office, September 1990).

2. U.S. Library of Congress, Congressional Research Service analysis of data from the March 1989 Current Population Survey (Washington, DC) May 7, 1991.

3. "Beyond Medicare: Which Insurance Do You Need?" *Consumer Reports* 54(6):375, June 1990.

4. ProPAC estimates based on data from HCFA's Office of the Actuary, Office of Medicare Cost Estimates. These figures were computed assuming Medicare supplemental-type policies, where 68 percent of beneficiaries had medigap policies and 10 percent were dual-eligibles. Therefore, they may understate the actual amount if the policies were more generous than minimum standards. The estimates are not adjusted for inflation.

5. At the option of the insurer, medigap insurance may be certified by the Secretary of Health and Human Services if it meets or exceeds certain content and benefit standards as defined in the Baucus amendment. A policy bearing the Secretary's certification will inform the purchaser that the policy meets minimum governmental standards and requirements for Medicare supplemental-type insurance.

6. U.S. Congress, General Accounting Office, *Medigap Insurance: Better Consumer Protection Should Result from 1990 Changes to Baucus Amendment*, Report to Congressional Requestors, GAO/HRD-91-49, Washington, DC, March 1991.

7. Alan C. Monheit and Claudia L. Schur, "Health Insurance Coverage of Retired Persons," *National Medical Expenditure Survey Research Findings 2*, DHHS Pub. No. (PHS) 89-3444, National Center for Health Services Research and Health Care Technology Assessment (Rockville, MD: NCHSR, September 1989).

8. Ibid.

9. The Wyatt Company, retiree health survey data, 1989–1990, unpublished data, Washington, DC, February 11, 1991.

10. This is consistent with findings in Foster Higgins' *Health Care Benefits Survey 1988*, Report 4: Retiree Health Care (Princeton, NJ: A. Foster Higgins, 1989). More than 1,600 employers responded to this survey, which covered over 10 million employees. Participants include employers of all sizes and industry types and represented all states.

11. The Wyatt Company, *Medical Benefits for Active and Retired Employees*, unpublished, Washington, DC, 1990.

12. These figures are calculated based on data from medium- and large-sized establishments only.

13. Joseph S. Piacentini and Timothy J. Cevino, *EBRI Databook on Employee Benefits* (Washington, DC: EBRI, 1990)204.

14. Foster Higgins, *Health Care Benefits Survey* 1988, Report 4: Retiree Health Care.

15. The GAO assumed that 60 percent of workers would retiree at age 60 (early retirement) and the remaining 40 percent at age 65 (normal retirement).

16. U.S. Congress, General Accounting Office, *Employee Benefits: Companies' Retiree Health Liabilities Large, Advance Funding Costly*, GAO/HRD-89-51, Washington, DC, June 1989.

17. Jonathan C. Dopkeen, "Post-Retirement Benefits: A Bottomless Liability?" *Business and Health*, 9-14, June 1987.

18. General Accounting Office, *Employee Benefits*.

19. Lawrence H. Thompson, assistant comptroller general, Human Resources Division, U.S. General Accounting Office, "Future Security of Retirees' Health Benefits in Question," testimony at hearing before the Subcommittee on Oversight, Committee on Ways and Means, U.S. House of Representatives, Washington, DC, September 15, 1988.

20. U.S. Congress, Joint Committee on Taxation, *Overview of Present Law, Proposals and Isssues Relating to Employer-Provided Health Insurance* (JCS-15-88), committee print, September 13, 1988.

21. These figures differ due to the use of different assumptions about health care inflation and utilization rates.

22. Piacentini and Cevino, *EBRI Databook*, 207.

23. Survey by Towers, Perrin, Forster & Crosby.

24. "Retiree Health Benefits Total 12 Percent of Payroll," *Investor's Daily*, February 2, 1988, 9.

25. U.S. Congress, Congressional Budget Office, "Sources of Supplemental Insurance of Medicare Enrollees," staff memorandum, Washington, DC, January 28, 1989.

26. Monheit and Schur, "Coverage of Retired Persons."

27. Rosalie A. Kane and Robert L. Kane, *Long Term Care: Principles, Programs, and Policies* (New York, N.Y.: Springer Publishing, 1987) 4.

28. U.S. Congress, The Pepper Commission, U.S. Bipartisian Commission on Comprehensive Health Care, *A Call for Action,* Final Report (Washington, DC: U.S. Government Printing Office, September 1990).

29. Peter Kemper and Christopher M. Murtaugh, "Lifetime Use of Nursing Home Care," *New England Journal of Medicine* 324(9):595-600, February 28, 1991.

30. Health Care Financing Administration, Office of National Cost Estimates, "National Health Expenditures, 1988," *Health Care Financing Review* 11(4):1-41, Summer 1990.

31. "Long-Term Care Insurance: A Market Update," *HIAA Research Bulletin*, January 1991.

32. The Codman Research Group, Inc., *Utilization of Inpatient Hospital Services by Rural Medicare Beneficiaries,* ProPAC Extramural Technical Report No. E-91-03, May 1991.

33. The analysis controls for differences in utilization associated with age and sex differences.

34. In 1989, 35 hospitals closed completely; 30 closed inpatient services and retained outpatient or long-term care services. To be consistent with previous ProPAC research on hospital closures, only the results for hospitals that closed completely are presented.

35. Ross M. Mullner, Robert J. Rydman, and David G. Ghiteis, "Rural Hospital Survival: An Analysis of Facilities and Services Correlated with Risk of Closure," *Hospital & Health Services Administration* 35(1):121-37, Spring 1990.

36. The number of physicians in the counties ranged from zero (Montana) to 10 (Alabama).

37. Emmett B. Keeler and others, "Changes in Sickness at Admission Following the Introduction of the Prospective Payment System," *Journal of the American Medical Association* 264(15):1962-68, October 17, 1990.

38. Lisa B. Rubenstein and others, "Changes in Quality of Care for Five Diseases Measured by Implicit Review, 1981-1986," *Journal of the American Medical Association* 264(15):1974-79, October 17, 1990.

39. Katherine L. Kahn and others, "Measuring Quality of Care with Explicit Process Criteria Before and After Implementation of the DRG-Based Prospective Payment System," *Journal of the American Medical Association* 264(15): 1969-73, October 17, 1990.

40. Jacqueline Kosekoff and others, "Prospective Payment System and Impairment at Discharge," *Journal of the American Medical Association* 264(15):1980-83, October 17, 1990.

41. Katherine L. Kahn and others, "Comparing Outcomes of Care Before and After Implementation of the DRG-Based Prospective Payment System," *Journal of the American Medical Association* 264(15):1984-88, October 17, 1990.

42. U.S. Department of Health and Human Services, Health Care Financing Administration, Health Standards Quality Bureau, HCFA Inpatient Screen Failures, Fiscal Year 1990, unpublished data.

43. *Hospital Readmissions*, prepared by BOTEC Analysis Corporation under HHS contract No. HHS-100-88-0019, December 1989.

44. U.S. Congress, General Accounting Office, *Medicare: Improvements Needed in the Identification of Inappropriate Hospital Care*, Report to the Chairman, Subcommittee on Health, Committee on Ways and Means, House of Representatives, GAO/PEMD-90-7, Washington, DC, December 1989.

Appendixes

Appendix A. Biographical Sketches of Commissioners

Stuart H. Altman, Chairman

Stuart H. Altman, dean of the Florence Heller Graduate School for Social Policy, Brandeis University, and Sol C. Chaikin Professor of National Health Policy (currently on leave as interim president of Brandeis University), is an economist whose research interests are primarily in the area of Federal health policy. He has been at Brandeis since 1977. Between 1971 and 1976, Dean Altman was deputy assistant secretary for planning and evaluation/health at the Department of Health, Education and Welfare (now the Department of Health and Human Services). From 1973 to 1974, he also served as the deputy director for health of the President's Cost of Living Council, where he was responsible for developing the council's program on health care cost containment. Dean Altman is a member of the Institute of Medicine of the National Academy of Sciences and former member of its governing council; on the board of Beth Israel Hospital (Boston); and chairman of the board of the Health Policy Center at Brandeis. He is a past president of the National Association for Health Services Research and former board member of The Robert Wood Johnson Clinical Scholars Program. Dean Altman received both an M.A. and a Ph.D. in economics from the University of California (Los Angeles).

Richard A. Berman

Richard A. Berman is a vice president of Korn/Ferry International and is responsible for the health care practice in the firm's Eastern region. Mr. Berman was previously a practice leader for health care at McKinsey & Company, Inc. In addition, he serves several organizations, including the New York City March of Dimes, the Mayor of New York's Management Advisory Task Force, and the New York State Council on Health Care Financing. Previously, he was a management consultant and a candidate in the Democratic primary in the 20th Congressional District. Mr. Berman was the executive vice president of New York University Medical Center from 1983 to 1986. At that time he was also a professor in health care management at the School of Medicine. Mr. Berman worked for New York State from 1977 to 1983, first as director of the Office of Health Systems Management and later as the commissioner of the Division of Housing and Community Renewal. Before that, he was assistant dean of Cornell University Medical School, as well as associate director for ambulatory services at the New York Hospital, clinical assistant professor in the Departments of Medicine and Public Health at Cornell University Medical School, and senior program consultant and program director for The Robert Wood Johnson Foundation. Prior to these positions, Mr. Berman was special assistant for policy development, Office of the Assistant Secretary for Health, Department of Health, Education and Welfare. He also served in the Office of Health in the Economic Stabilization Program, the University of Utah Hospital, and the U.S. Public Health Service. Mr. Berman received B.A., M.B.A., and M.H.A. degrees from the University of Michigan.

James D. Bernstein

James D. Bernstein is director of the North Carolina Office of Rural Health and Resource Development and president, North Carolina Foundation for Alternative Health Programs, Inc. He has also been a research associate with the Health Services Research Center at the University of North Carolina at Chapel Hill since 1970. Mr. Bernstein has adjunct appointments with the University of North Carolina School of Medicine and with the Duke University School of Medicine. Between 1970 and 1973, he was a Fellow in the Career Development Program in Global Community Health, a part of the U.S. Department of Health, Education and Welfare. Before that he worked with the Santa Fe Service Unit of the Indian Health Service. Mr. Bernstein has held a variety of professional positions, including vice chairman of the North Carolina Health Insurance Trust Commission, chairman of the rural health steering com-

mittee of the National Academy for State Health Policy, and member of the national advisory committee for The Robert Wood Johnson Foundation Hospital Based Rural Health Care Program. He has also been a consultant on projects related to indigent care, practice pattern variations, and cost-effective medical care. Mr. Bernstein received a B.A. in political economy from the Johns Hopkins University and an M.H.A. from the University of Michigan.

Curtis C. Erickson

Curtis C. Erickson is president emeritus and senior consultant with Great Plains Health Alliance, Inc., of Phillipsburg, Kansas. He served as president and CEO of this organization from 1959 to 1990 and as assistant director from 1955 to 1959. Having served the American Hospital Association (AHA) in many capacities, he became chairman of Regional Advisory Board 6 and was a trustee from 1987 to 1990. He has also chaired AHA's advisory panel to the Center for Small or Rural Hospitals and has been a member of the Council on Management, the Council on Federal Relations, and a representative to the House of Delegates. President of the Lutheran Hospital Association of America from 1974 to 1975, Mr. Erickson was also on the board of trustees from 1972 to 1982. He was president of the Kansas Hospital Association from 1965 to 1966, a member of the board of governors of the Healthcare Stabilization Fund for the Kansas Department of Insurance, and past district governor of Rotary International. From 1983 to 1986, Mr. Erickson served on The Robert Wood Johnson Foundation's National Advisory Committee for the Rural Hospital Program of Extended Care Services. Mr. Erickson is a member of the American College of Healthcare Executives. From 1951 to 1955, he served in the U.S. Air Force. He received a B.S. in business administration from Fort Hays Kansas State University in 1951.

William D. Fullerton

William D. Fullerton is an adjunct professor in the School of Medicine, University of North Carolina at Chapel Hill. From 1978 to 1984, he was principal and president of Health Policy Alternatives, Inc., where he is now a part-time consultant. The first deputy administrator of the Health Care Financing Administration (1977–78), Mr. Fullerton was also a special consultant to the Secretary of the Department of Health, Education and Welfare. He served as chief of the professional health staff, Committee on Ways and Means, U.S. House of Representatives, from 1970 to 1976. Mr. Fullerton was the first executive secretary of the Health Insurance Benefits Advisory Council in 1965–66. Before that, he held various positions in the Social Security Administration. He is a member of the Institute of Medicine of the National Academy of Sciences and a member of the National Academy of Social Insurance. Mr. Fullerton received a B.A. from the University of Rochester.

William S. Hoffman

William S. Hoffman has been director of the Social Security Department of the International Union of the United Auto Workers since 1984. Previously, he was the assistant director and a consultant to the department. Mr. Hoffman is also director of the Michigan Health and Social Security Research Institute, Inc., where from 1973 to 1980 he was a senior research associate. An active participant in national and state health care issues, Mr. Hoffman has served on the Michigan Certificate of Need Commission, the Department of Health and Human Services's Council on Graduate Medical Education, the Department of Labor's Advisory Council on Employee Welfare and Pension Benefit Plans, the Governor's Task Force on Access to Health Care in Michigan, and the Institute of Medicine of the National Academy of Sciences. He served in various research and teaching capacities with the Social Science Research Center at Mercy College of Detroit, the Department of Sociology at Wayne State University, the Detroit Residential Manpower Center, the Boys Republic, and the Merrill Palmer Institute. Mr. Hoffman has written and spoken extensively on such issues as the use of prepaid mental health care services and organized labor's perspective on current health care issues and legislation. He received a B.A. in psychology from Otterbein College and M.A. and Ph.D. degrees in sociology from Wayne State University.

Clark E. Kerr

Clark E. Kerr is vice president of government relations, Bank of America. He is also president of

the California Business Group on Health, where he manages the legislative agenda. In addition, he is acting chairman of the California Health Policy and Data Advisory Commission, and chairman of the Users Group of the National Committee for Quality Assurance. Mr. Kerr serves on the board of directors of the Washington Business Group on Health, and he co-chairs several health committees. Prior Bank of America positions include manager of corporate health programs, manager of benefits planning, manager of corporate training, and positions in marketing and world banking financial services. Mr. Kerr received an M.B.A. in marketing from the University of California at Berkeley.

James R. Kimmey

James R. Kimmey is dean of the School of Public Health and professor of public health at the St. Louis University Medical Center, as well as a professor of community medicine at the St. Louis University School of Medicine. In addition, Dr. Kimmey has taught at the University of Wisconsin, Johns Hopkins University, New York University, and Columbia University. He was administrator of the Division of Health Policy and Planning of the state of Wisconsin and executive director of the American Public Health Association in New York and Washington. Dr. Kimmey served as president of the American Health Planning Association (1980–81) and was a member of the board of directors. Former editor of *Health Planning Memorandum* and managing editor of the *American Journal of Public Health*, he has written extensively on health planning and other health policy topics. Dr. Kimmey received B.S., M.S., and M.D. degrees from the University of Wisconsin and an M.P.H. from the University of California.

David A. Kindig

David A. Kindig is director of Programs in Health Management and professor of preventive medicine at the University of Wisconsin-Madison School of Medicine. He has also served as vice chancellor for health sciences at the university. Among Dr. Kindig's other academic appointments are visiting professor at the Beijing Medical University, School of Public Health. Dr. Kindig was director of Montefiore Hospital and Medical Center (1976–80) and deputy director of the Bureau of Health Manpower, U.S. Department of Health, Education and Welfare (1974–76). He is on the Dissemination Study Section of the Agency for Health Care Policy and Research and the board of directors of the Association of University Programs in Health Administration. He has also served on the state of Wisconsin's Council for Uninsured Health Care Programs and chaired the Wisconsin Governor's Task Force on AIDS. A member of the editorial board of *Medical Care Review*, Dr. Kindig has written extensively on both medical and health policy issues. He received a B.A. from Carleton College and M.D. and Ph.D. degrees from the University of Chicago School of Medicine.

Larry L. Mathis

Larry L. Mathis is president and chief executive officer of The Methodist Hospital System in Houston, Texas. This system includes 12 member corporations and The Methodist Hospital. He has held this position since 1983. Before that, Mr. Mathis held a number of positions at The Methodist Hospital. Mr. Mathis is a member of the board of trustees of the American Hospital Association and has been elected to serve on its executive committee. He was chairman of The Greater Houston Hospital Council, chairman of the Texas Hospital Association, and regent for Texas in the American College of Healthcare Executives. In addition, Mr. Mathis served as a member of the administrative board of the Association of American Medical Colleges's Council of Teaching Hospitals, and as chairman of the National Advisory Council on Health Care Technology Assessment from 1985 to 1988. He was a consultant to the Ministry of Education and Culture in Brazil. Mr. Mathis served in the U.S. Army from 1965 to 1970. He received a B.A. in social sciences from Pittsburgh State University in Kansas and an M.H.A. from Washington University.

Barbara J. McNeil*

Barbara J. McNeil is a Ridley Watts professor of Health Care Policy, head of the Department of Health Care Policy at Harvard Medical School, and professor of radiology at Brigham and Women's Hospital. She is also director of the Center for

Cost-Effective Care, Brigham and Women's Hospital. Dr. McNeil is a member of the Harvard-MIT Division of Health Sciences and Technology. Her professional and advisory activities are extensive. Dr. McNeil is a member of the joint committee of the American College of Radiology, the Association of University Radiologists, and the Society of Chairmen of Academic Radiology. She is also a member of the Fleischner Society, the Institute of Medicine of the National Academy of Sciences, and the National Council on Radiation Protection and Measurements. She serves on the American College of Radiology's committees on nuclear radiology and on quality assurance and efficacy. Formerly, Dr. McNeil was on the board of the Association for Health Services Research, the policy council of the Association for Public Policy Analysis and Management, the board of trustees of the Society for Medical Decision Making, and a member of the National Council on Health Care Technology. She has written five books and more than 150 professional articles and reports. Dr. McNeil has an A.B. in chemistry from Emmanuel College, an M.D. from Harvard Medical School, and a Ph.D. in biological chemistry from Harvard University. She also attended the Advanced Management Program at Harvard Business School.

Kathryn M. Mershon

Kathryn M. Mershon is senior vice president at Humana, Inc., a position she has held since 1988. She previously served as Humana's vice president, nursing. She holds an adjunct assistant professorship of nursing at Spalding University. From 1971 to 1980, Ms. Mershon was associate executive director, nursing at St. Joseph Infirmary (now Humana Hospital Audubon) in Louisville, Kentucky. Before that, she was a clinical nursing specialist at St. Joseph Infirmary, clinical instructor at St. Francis Xavier Hospital School of Nursing, and a staff nurse. She has a distinguished list of professional and community activities, including board of governors of the Federation of American Health Systems, board member of the National League for Nursing, and editorial review board of *Nursing & Health Care*. She is a former trustee of Spalding University and member of the advisory board of the University of Louisville's School of Nursing. Ms. Mershon also served on the Louisville Board of Health and on the board of governors of Louisville General Hospital. She has made numerous public presentations on a variety of nursing-related issues. Ms. Mershon received a B.S. in nursing from Spalding University and an M.S. in nursing from St. Louis University.

Donald R. Oder

Donald R. Oder is senior vice president and chief operating officer of Rush-Presbyterian-St. Luke's Medical Center in Chicago, where he formerly was senior vice president. Before that, he was audit manager with Arthur Andersen & Co. in Chicago. Mr. Oder has held various academic appointments, and is currently professor in the Department of Health Systems Management at the Rush University College of Health Sciences. He is a member of and has held leadership positions in several professional associations, including the American College of Healthcare Executives, the American Hospital Association, the Illinois Hospital Association, Voluntary Hospitals of America, the American Institute of Certified Public Accountants, and the Illinois C.P.A. Society. He has served on the board of directors of the Better Business Bureau of Metropolitan Chicago, Inc., and on the occupational health committee of the Chicago Association of Commerce and Industry. Mr. Oder received a B.S. from Wichita State University, a C.P.A. certificate from the University of Illinois, and an M.B.A. from the University of Chicago.

Elliott C. Roberts, Sr.

Elliott C. Roberts, Sr., is assistant secretary and chief executive officer of Charity Hospital at New Orleans, a position he has held since 1984. In this capacity, he implemented a reorganization of the Louisiana State Department of Health and Human Resources. Mr. Roberts holds an assistant professorship in the Department of Public Health and Preventive Medicine at Louisiana State University Medical School. He is also a preceptor in the Department of Health Systems Management at Tulane University School of Public Health and Tropical Medicine. From 1980 to 1984, Mr. Roberts was chief executive officer of Cook County Hospital in Chicago. Before that, he was vice president and associate project director for Hyatt Medical Management Services, as well as commissioner of hospitals and executive director of Detroit General

Hospital. Mr. Roberts served as executive director at both Harlem Hospital Center (1969–72) and Mercy Douglass Hospital in Philadelphia (1965–69). An active member of the American Hospital Association, Mr. Roberts served on its board of trustees for five years as well as on the nominating committee, House of Delegates, and in other capacities. He has held similar positions of responsibility at the National Association of Public Hospitals and the Association of American Medical Colleges/Council on Teaching Hospitals. In addition to many other appointments, Mr. Roberts served on the Secretary's Commission on Nursing, Department of Health and Human Services. He received an M.A. in business administration-hospital administration from the George Washington University.

J. Michael Sadaj

J. Michael Sadaj has been medical director of respiratory care services and an active staff member at St. James Community Hospital in Butte, Montana, since 1979. He is presently secretary-treasurer of the medical staff there as well. In addition, Dr. Sadaj practices with the Rocky Mountain Service Corporation, specializing in internal medicine and pulmonary diseases. Dr. Sadaj formerly was medical director of respiratory therapy at Silver Bow General Hospital in Butte. He served on the executive committee and the infection control committee of both hospitals. Dr. Sadaj also chaired the medical section at St. James Community Hospital (1980–83) and at Silver Bow General Hospital (1980–81). From 1974 to 1979, Dr. Sadaj was a resident in internal medicine and a Fellow in pulmonary diseases at the University of Nebraska Medical Center in Omaha. He has been a member of and held leadership positions in several organizations, including the Nebraska Medical Association, American Medical Association, Montana Medical Association, and the Montana Professional Assistance Program. In 1984, he was elected to a local government study commission. Dr. Sadaj received B.S. and M.D. degrees from the University of Nebraska Medical Center.

Leonard D. Schaeffer

Leonard D. Schaeffer is chairman of the board and chief executive officer of Blue Cross of California. He came to Blue Cross from his position as president of Group Health, Inc. Mr. Schaeffer was formerly executive vice president and chief operating officer of the Student Loan Marketing Association. He served as administrator of the Health Care Financing Administration, Department of Health and Human Services, and as assistant secretary for management and budget in the Department of Health, Education and Welfare. Before that, Mr. Schaeffer was vice president of Citibank, N.A. He has held various positions with the state of Illinois, including director of the Bureau of Budget, head of the State Planning Office, chairman of the Illinois Capital Development Board, and deputy director for management, Illinois Department of Mental Health and Developmental Disabilities. He was previously vice president of a private investment banking firm, and a consultant for Arthur Andersen & Co. A Kellogg Fellow, Mr. Schaeffer is a member of the board of the University of Southern California, School of Public Administration; the Cultural Foundation; Town Hall of California; United Way; and *Managed Healthcare*. Mr. Schaeffer is also an International Fellow at the King's Fund College, London, England. He was graduated from Princeton University.

Jack K. Shelton*

Jack K. Shelton is manager of the Employee Insurance Department of the Ford Motor Company, which he joined in 1956. He is responsible for the financial control and analysis of nearly all employee benefit plans. In this capacity, he participates in union negotiations, relations with insurance carriers, and financial control of company-administered plans. He also reviews changes in wage and benefit programs for foreign subsidiaries. Mr. Shelton is actively involved in a number of local and national health care organizations, serving as a director of the National Fund for Medical Education, a director of Blue Cross and Blue Shield of Michigan, and a member of the Statewide Health Coordinating Council of Michigan. In 1985, he was a member of an Office of Technology Assessment Advisory Panel on Alternative Physician Payments for Medicare and chairman of the Employer Prospective Payment Advisory Commission for the Washington Business Group on Health. He is past chairman of the National Industry Council on HMO Development, the Michigan Health Economics Coalition, the Michigan Hospital Capacity Reduction Corporation, and the Health Alliance Plan (Michigan's largest HMO). Mr. Shelton received B.S.

and M.S. degrees in industrial psychology from Oklahoma State University.

J. B. Silvers

J. B. Silvers is co-director of the Health Systems Management Center of Case Western Reserve University. He is also the William M. and Elizabeth C. Treuhaft Professor of Management and professor of banking and finance at the university's Weatherhead School of Management, and professor of epidemiology and biostatistics at the School of Medicine. Before joining Case Western Reserve, Dr. Silvers was a faculty member at the business schools of Indiana, Harvard, and Stanford. At Harvard, he directed the Program for Financial Management and Strategy in Health for five years and served on the faculty of the Program for Health Systems Management for 10 years. Dr. Silvers served the Department of Health and Human Services as a member of the Secretary's Commission on Nursing and as a member of the Health Care Technology Study Section of the National Center for Health Services Research. During 1983–84, he chaired the Governor's Commission on Ohio Health Care Costs. He has written extensively in the fields of corporate financial management, and health care and hospital finance. He also serves as a consultant or adviser to numerous private organizations. Dr. Silvers received a Ph.D. in finance and economics from Stanford University, and M.S. and B.S. degrees from Purdue University in industrial administration and engineering, respectively.

Bruce C. Vladeck

Bruce C. Vladeck is president of the United Hospital Fund of New York. Immediately before joining that organization, Dr. Vladeck was assistant vice president of The Robert Wood Johnson Foundation. From 1979 to 1982, he was assistant commissioner for health planning and resources development of the New Jersey State Department of Health. In that position, he was director of the State Health Planning and Development Agency, where he oversaw the implementation of New Jersey's all-payer, DRG-based hospital prospective payment system. Dr. Vladeck taught for four and one-half years at Columbia University, and has served on the adjunct faculty of Rutgers, Princeton, the College of Medicine and Dentistry of New Jersey, and New York University. He is the author of *Unloving Care: The Nursing Home Tragedy,* and has written numerous articles and book chapters on health policy, health care finance, and health politics. He is a member of the board of directors of the New York City Health and Hospitals Corporation, the executive committee of the New York Blood Center, the advisory committee to the Wagner School of Public Service of New York University, the visiting committee of the School of Management and Urban Policy of the New York School for Social Research, and the Institute of Medicine of the National Academy of Science. He received a bachelor's degree in government from Harvard College and M.A. and Ph.D. degrees in political science from the University of Michigan.

Sankey V. Williams*

Sankey V. Williams is director of The Robert Wood Johnson Foundation Clinical Scholars Program at the University of Pennsylvania and serves as acting chief, Section of General Internal Medicine. In addition to these responsibilities, Dr. Williams is a professor of medicine at the University of Pennsylvania and professor of health care systems at the university's Wharton School. He is also associate director for medical affairs in the Wharton School's Leonard Davis Institute of Health Economics. Dr. Williams is an associate in the Clinical Epidemiology Unit of the university and formerly served as associate director for clinical research at the University of Pennsylvania's Center for the Study of Aging. He is also chairman of the Health Services Research Development Subcommittee, the Agency for Health Care Policy and Research. He was a Henry J. Kaiser Family Foundation Faculty Scholar in general internal medicine from 1981 to 1986. Dr. Williams currently serves as an associate editor of the *Journal of General Internal Medicine*. Certified by the American Board of Internal Medicine, Dr. Williams has published and lectured widely in many fields, including medical decision making, physician behavior, and hospital case-mix management. He received a B.A. from Princeton University and an M.D. from Harvard Medical School. Dr. Williams completed his internship and residency in medicine at the Hospital of the University of Pennsylvania and was a Robert Wood Johnson Foundation Clinical Scholar at the university.

---

*Term expired 1991

Appendix B. Glossary

The following acronyms and terms are frequently referenced in discussions concerning health care policy. Many definitions of terms are from various Health Care Financing Administration publications and other sources, including the American Hospital Association, the Congressional Budget Office, the Congressional Research Service, the Institute of Medicine, and the Office of Management and Budget, as well as the September 1, 1983, *Federal Register*, Volume 48, Number 171. Where necessary, ProPAC has developed definitions consistent with its use of the terms in Commission documents.

ACRONYMS

AARP	American Association of Retired Persons
AFDC	Aid to Families with Dependent Children
AHA	American Hospital Association
AHCPR	Agency for Health Care Policy and Research
AIDS	Acquired Immune Deficiency Syndrome
ASC	Ambulatory Surgical Center
ASPE	Assistant Secretary for Planning and Evaluation, Department of Health and Human Services
BDMS	Bureau of Data Management and Strategy, Health Care Financing Administration
CABG	Coronary Artery Bypass Graft
CBO	Congressional Budget Office
CHA	Catholic Health Association
CHAMPUS	Civilian Health and Medical Programs of the Uniformed Services
CMI	Case-Mix Index
CNM	Certified Nurse-Midwife
COBRA	Consolidated Omnibus Budget Reconciliation Act of 1985
CP	Clinical Psychologist
CPI	Consumer Price Index
CPS	Current Population Survey
CRNA	Certified Registered Nurse Anesthetist
CRS	Congressional Research Service
CSW	Clinical Social Worker
CT	Computerized Axial Tomography
DAF	Discretionary Adjustment Factor
DOD	Department of Defense
DRG	Diagnosis-Related Group
DSH	Disproportionate Share Hospital
EBRI	Employee Benefit Research Institute
ERISA	Employee Retirement Income Security Act
ESRD	End-Stage Renal Disease
FASB	Financial Accounting Standards Board
FR	Federal Register
FTE	Full-Time Equivalent
FY	Fiscal Year
GAO	General Accounting Office
GNP	Gross National Product
HCFA	Health Care Financing Administration
HHA	Home Health Agency
HHS	Health and Human Services, Department of
HI	Hospital Insurance program (or Medicare Part A)
HIAA	Health Insurance Association of America
HMO	Health Maintenance Organization
HSQB	Health Standards and Quality Bureau, Health Care Financing Administration
ICD-9-CM	International Classification of Diseases, Ninth Revision, Clinical Modification
ICF	Intermediate Care Facility
IME	Indirect Medical Education
IOL	Intraocular Lens
IOM	Institute of Medicine
IPA	Independent Practice Association
IRS	Internal Revenue Service
JCAHO	Joint Commission on the Accreditation of Healthcare Organizations
LPN	Licensed Practical Nurse
LTC	Long-Term Care
NAIC	National Association of Insurance Commissioners
MCCA	Medicare Catastrophic Coverage Act of 1988
MCR	Medicare Cost Report
MedPAR	Medicare Patient Analysis and Review File
MRI	Magnetic Resonance Imaging
MSA	Metropolitan Statistical Area
NCHSR	National Center for Health Services Research
NMES	National Medical Expenditure Survey
NP	Nurse Practitioner
OBRA	Omnibus Budget Reconciliation Act
OMB	Office of Management and Budget
OPD	Outpatient Department
OTA	Office of Technology Assessment
PA	Physician Assistant
PHS	Public Health Service
PPO	Preferred Provider Organization
PPRC	Physician Payment Review Commission
PRHB	Post-Retirement Health Benefit
ProPAC	Prospective Payment Assessment Commission
PPS	Prospective Payment System
PRO	Peer Review Organization
RN	Registered Nurse
SCH	Sole Community Hospital
SMI	Supplemental Medical Insurance program (or Medicare Part B)
SNF	Skilled Nursing Facility
TEFRA	Tax Equity and Fiscal Responsibility Act of 1982
UCDS	Uniform Clinical Data Set
VA	Veterans Affairs, Department of

TERMS

Adjusted Admissions—An aggregate hospital output measure reflecting the number of inpatient admissions and outpatient visits, expressed in units equivalent to an inpatient admission. The number of outpatient visits equivalent to an admission is based on the ratio of inpatient charges per admission to outpatient charges per visit for each hospital. (AHA and ProPAC)

Balance Billing—Physician charges in excess of Medicare-allowed amounts, for which Medicare patients are responsible, subject to maximum actual allowable charge limits. (ProPAC)

Basic DRG Payment Rate—The payment rate a hospital will receive for a Medicare patient in a particular diagnosis-related group (DRG). The payment rate reflects the level of wage rates in the hospital's area and the relative costliness of the diagnosis-related group. (ProPAC)

Beneficiary Liability—Amount beneficiaries must pay for Medicare-covered services. Types of liability include premiums, copayments, deductibles, and balance billing amounts. (ProPAC)

Capital—Capital represents the value of an organization's assets at any given time. Medicare's definition of capital costs includes depreciation, interest, leases and rentals, and taxes and insurance on tangible assets, such as plant and equipment. (ProPAC)

Carrier—An organization, typically an insurance company, that has a contract with the Health Care Financing Administration to administer claims processing and make Medicare payments to providers of services for most Part B benefits. (See also Part A and Part B.) (HCFA)

Case Mix—The mix of patients treated within a particular institutional setting, such as the hospital. Patient classification systems, such as the diagnosis-related group system, can be used to measure hospital case mix. As a result, patient classification systems are also known as case-mix systems. (ProPAC)

Case-Mix Index (CMI)—A measure of the average relative costliness of cases treated by a hospital compared with the national average cost of all Medicare hospital cases. The CMI is based on the distribution of cases across diagnosis-related groups and the relative costliness of cases in each diagnosis-related group. (HCFA)

Charges—The prices of services provided by a hospital (for example, surgical operations, emergency room visits, days of nursing care, or radiology services). Total charges are equivalent to gross patient revenue. Hospitals must apply the same schedule of charges to all patients, regardless of the expected sources or amount of payment. (ProPAC)

Diagnosis-Related Groups (DRGs)—A system for determining case mix. Originally developed by researchers at Yale University, the DRG system classifies patients into groups based on the principal diagnosis, the presence and type of surgical procedure, patient age, presence or absence of significant comorbidities or complications, and other relevant criteria. The DRG classification attempts to categorize patients into groups that are clinically coherent and homogeneous with respect to resource use. PPS currently uses 485 mutually exclusive DRGs. (See also Case Mix.) (ProPAC)

Discretionary Adjustment Factor (DAF)—The numeric representation of the Commission's judgment regarding the rate at which the Medicare standardized amounts should increase or decrease beyond inflation and real changes in case mix. The Commission's fiscal year 1992 DAF recommendation for PPS and PPS-excluded hospitals includes two components: a positive adjustment for costs of scientific and technological advancement, and a negative adjustment for anticipated increases in hospital productivity. (ProPAC)

Disproportionate Share Hospital (DSH) Adjustment—A payment adjustment under PPS for hospitals that serve a relatively large volume of low-income patients. (CBO)

Excluded Hospitals and Units—Hospitals and units of hospitals that are specifically excluded from Medicare's prospective payment system. These include children's, cancer, long-term, rehabilitation, and psychiatric hospitals. Rehabilitation or psychiatric "distinct part" subunits of acute care hospitals are exempt if they meet certain criteria

specified by the Secretary of Health and Human Services. Hospitals located in U.S. territories, Federal hospitals, and Christian Science Sanatoria are also excluded. Excluded hospitals remain under cost-based reimbursement, subject to TEFRA target rate of increase limits. (See also Tax Equity and Fiscal Responsibility Act of 1982.) (48 FR 39755)

Federal Medical Assistance Percentage—Under the Medicaid program, the Federal government matches a percentage of state expenditures, provided Federal requirements are met. This matching percentage or match rate is determined by a formula that is designed to provide a higher percentage of Federal matching funds to states with lower per capita incomes and a lower percentage of matching funds for states with higher per capita incomes. The formula is adjusted annually. (CRS)

Financial Accounting Standards Board (FASB)—An independent organization responsible for establishing generally accepted accounting principles. (ProPAC)

Fiscal Intermediary—An organization, usually an insurance company, that has a contract with the Health Care Financing Administration to determine and make Medicare payments for Part A and certain Part B benefits to hospitals and other providers of services and to perform other related functions. (See also Part A and Part B.) (HCFA)

Fiscal Year—A 12-month period for which an organization plans the use of its funds. Typically refers to the Federal government's fiscal year (October 1 to September 30). Fiscal years are referred to by the calendar year in which they end; for example, the Federal fiscal year 1991 began October 1, 1990, and ends September 30, 1991. Individual providers can designate their own fiscal years, and this is reflected in differences in the time periods covered by the Medicare Cost Reports. (ProPAC)

Hospital Market Basket Index—An index of the national average annual change in the prices of goods and services hospitals purchase to provide inpatient care (hospital inputs). (HCFA)

Indirect Medical Education (IME) Adjustment—A payment adjustment applied to total DRG payments under PPS for hospitals that operate an approved graduate medical education program. This adjustment is based on the hospital's ratio of the number of interns and residents to the number of beds. (HCFA)

Input—The labor, capital, and other resources used to produce goods and services. (ProPAC)

Intermediate Care Facility (ICF)—An institution furnishing health-related care and services to individuals who do not require the degree of care provided by hospitals or skilled nursing facilities as defined under Title XIX (Medicaid) of the Social Security Act. (IOM)

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9- CM)—A diagnosis and procedure classification system designed to facilitate collection of uniform and comparable health information. The disease classification is revised periodically. The ICD-9-CM is the ninth version and was issued in 1979. This system is the basis for grouping patients into diagnosis-related groups. (HCFA)

Large Urban Area—A metropolitan statistical area with a population of more than 1 million or a New England County Metropolitan Area with a population of more than 970,000. (See also Other Urban Area and Metropolitan Statistical Area.) (ProPAC)

Long-Term Care—A variety of ongoing health and social services provided for individuals who need assistance on a continuing basis because of physical or mental disability. Services can be furnished in an institution, the home, or the community, and include informal services provided by family or friends as well as formal services provided by professionals or agencies. (IOM)

Loss Ratio—The proportion of insurance premiums paid out in benefits. (ProPAC)

Major Teaching Hospitals—Hospitals with an approved graduate medical education program and whose ratio of the number of interns and residents to the number of beds is 0.25 or greater. (See also Other Teaching Hospitals.) (HCFA)

Medicare Cost Report (MCR)—An annual report required of all institutions participating in the Medicare program that records the costs incurred by the

institution for providing services to all patients, the charges ascribed to all patients, and the Medicare payments received during a specified reporting period. Costs are defined and reported according to rules established by the Medicare program. (ProPAC)

Medicare Inpatient Margin—A measure that compares Medicare payments for inpatient services with inpatient costs attributable to Medicare patients. This measure includes PPS payments and Medicare payments for allowable costs currently excluded from PPS, such as capital and direct medical education. (See also PPS Margin and Total Margin.) (ProPAC)

Medicare Provider Analysis and Review (MedPAR) File—A HCFA data file that contains charge data and clinical characteristics, such as principal diagnosis and principal procedures, for every hospital inpatient stay for which a bill is submitted to Medicare for payment. (ProPAC)

Medigap—A privately purchased insurance policy that supplements Medicare coverage and meets specified requirements. (ProPAC)

Metropolitan Statistical Area (MSA)—A geographic area that must include at least: (a) one city with 50,000 or more inhabitants, or (b) a Census Bureau-defined urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (75,000 in New England). (OMB)

Other Teaching Hospitals—Those hospitals with an approved graduate medical education program and whose ratio of interns and residents to beds is less than 0.25. (See also Major Teaching Hospitals.) (ProPAC)

Other Urban Area—A metropolitan statistical area with a population of 1 million or fewer, or a New England County Metropolitan Area with a population of 970,000 or fewer. (See also Large Urban Area and Metropolitan Statistical Area.) (ProPAC)

Outliers—Under PPS, hospitals receive additional payments for cases with an extremely long length of stay (day outliers) or extraordinarily high costs (cost outliers) when compared with other cases classified in the same diagnosis-related group. (ProPAC)

Part A—The Medicare Hospital Insurance (HI) program (Part A of Title XVIII of the Social Security Act) that covers beneficiaries for inpatient hospital, home health, hospice, and limited skilled nursing facility services. Beneficiaries are responsible for deductibles and copayments. (See also Fiscal Intermediary and Part B.) (ProPAC)

Part B—The Medicare Supplementary Medical Insurance (SMI) program (Part B of Title XVIII of the Social Security Act) that covers Medicare beneficiaries for physician services, medical supplies, and other outpatient treatment. Beneficiaries are responsible for monthly premiums, copayments, deductibles, and balance billing amounts. (See also Carrier and Part A.) (ProPAC)

Patient Classification System—A set of patient categories and the criteria for assigning cases to those categories that allow cases to be classified into distinct groups. Under PPS, patients are classified into categories for payment using the diagnosis-related groups patient classification system. (ProPAC)

Peer Review Organization (PRO)—Organizations that perform medical peer review of Medicare claims, including review of the validity of hospital diagnosis and procedure information; completeness, accuracy, and quality of care; appropriateness of admission and discharge; and appropriateness of PPS outlier cases. Currently, PROs review a 3 percent random sample of Medicare admissions and a 5 percent random sample of ambulatory cases. (ProPAC)

Post-Retirement Health Benefits (PRHBs)—Health benefits provided to retirees and, typically, to their dependents through an employer's group health plan. PRHBs are an earned benefit and are not taxed. (ProPAC)

PPS Margin—A measure that compares PPS payments to Medicare-allowable inpatient operating costs. This does not include Medicare payments and allowable hospital costs excluded from PPS, such as capital and direct medical education. (See also Medicare Inpatient Margin and Total Margin.) (ProPAC)

PPS Year—A hospital's fiscal year under the prospective payment system. PPS 1 refers to the hospital's fiscal year beginning during the Federal

fiscal year 1984. For a hospital with a fiscal year beginning January 1, PPS 1 covers the period from January 1, 1984, to December 31, 1984, for example. (See also Fiscal Year.) (ProPAC)

Principal Diagnosis—The condition, determined after examination, which is chiefly responsible for the admission of a patient to a hospital. (See also Diagnosis-Related Groups.) (ProPAC)

Productivity—The units of output produced for each unit of input used during a specified period of time. (See also Input.) (ProPAC)

Prospective Payment—A method of paying for health care services in which full amounts or rates of payment are established in advance, and providers are paid these amounts or rates regardless of the costs they actually incur. (ProPAC)

Skilled Nursing Facility (SNF)—An institution that has a transfer agreement with one or more participating hospitals, and that is primarily engaged in providing inpatient skilled nursing care and rehabilitative services, and that meets specific regulatory certification requirements. (IOM)

Standardized Amount—An amount that is intended to represent the cost of inpatient treatment for a typical Medicare patient in a reasonably efficient hospital, adjusted for geographic area and hospital characteristics. Standardized amounts are based on Medicare costs reported by hospitals for cost reporting periods ending during 1982, updated to the year of payment by an annual update factor for each year. (See also Update Factor.) (CRS)

Supplemental Insurance—Refers to any private health insurance plan held by a Medicare beneficiary, including medigap policies and post-retirement health benefits. (ProPAC)

Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA)—Legislation that established target rate of increase limits on reimbursements for inpatient operating costs per discharge under Medicare. A hospital's target amount is derived from costs in a base year. Its target amount for the current year is equal to its target amount for the previous year, updated by the allowable rate of increase for the current year. For a hospital excluded from PPS, Medicare payments for operating costs may not exceed its target amount. TEFRA preceded PPS as a payment system for hospitals, and most current PPS hospitals were paid under TEFRA rules in 1983. (ProPAC)

TEFRA Margins—A measure that compares Medicare payments for operating costs with Medicare allowable inpatient operating costs for PPS-excluded hospitals. (See also Tax Equity and Fiscal Responsibility Act of 1982 and Excluded Hospitals and Units.) (ProPAC)

Total Margin—A measure that compares total hospital revenues and expenses for all inpatient, outpatient and non-patient care activities. (See also Medicare Inpatient Margin and PPS Margin.) (ProPAC)

Unbundling of Hospital Inpatient Services—The provision of services in non-inpatient settings that were formerly furnished in inpatient settings (such as the performance of diagnostic studies before a patient's admission or the provision of rehabilitation services after the patient's discharge). Unbundling of inpatient hospital services is not prohibited by law, although hospital outpatient services provided up to 72 hours prior to admission are included in the diagnosis-related group payment. (ProPAC)

Uncompensated Care—Hospital care provided without payment from the patient or a government-sponsored or private insurance program. Includes both charity care and bad debts, for which the hospital has made an unsuccessful effort to collect payment due from the patient. (ProPAC)

Update Factor—The annual increase to the PPS standardized amounts. The update factor is the percentage change applied to the previous year's base payment rate. It is intended to reflect changes in the prices of goods and services purchased by hospitals, as well as changes in hospital productivity, technological advances, quality of care, and long-term cost-effectiveness of services. (See also Hospital Market Basket Index.) (ProPAC)

PROSPECTIVE PAYMENT ASSESSMENT COMMISSION
300 7TH STREET, S.W., SUITE 301B, WASHINGTON, D.C. 20024

CMS LIBRARY
3 8095 00015522 2